Project No. 1251-100

Crude Oil Tank Farms Project, Agrood Area 30 (Module-1)

PETROJET | Enppi | EGPC

System ID	**030-EL-004**
System Description	**Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System**

Sr.	Pre-Commissioning and Commissioning Dossier Index	Applicable (Yes/No)
1	**Mechanical Completion Certificate (MCC)**	
2	**Ready for Startup Certificate (RFSU)**	
3	**System Punch Lists**	
4	**System Limits Marked Up P&ID**	
5	**System Index**	
6	**Piping Pre-Commissioning**	
	6.01) Piping Test Packs	
	6.02) Piping Pre-commissioning Check Lists	
7	**Piping Commissioning**	
	7.01) Service Test, GLT, CLT and N2 Purging Certificates	
	7.02) Piping Commissioning Check Lists	

Sr.	Pre-Commissioning and Commissioning Dossier Index	Applicable (Yes/No)
8	**Mechanical Pre-Commissioning**	
	8.01) System Mechanical Index	
	8.02) Equipment Drawings	
	8.03) Equipment Datasheets	
	8.04) Boxing-up Certificates	

	8.05) Grouting Certificates	
	8.06) Pre-Alignment Certificates	
	8.07) Mechanical Pre-Commissioning Checklists	
9	**Mechanical Commissioning**	
	9.01) Final Alignment Certificates	
	9.02) Motor Solo Run Certificates	
	9.03) Mechanical Run Test (MRT) Certificates	
	9.04) Mechanical Commissioning Checklists	
	9.05) Mechanical Supplier Check Lists & Reports	
10	**Instrumentation Pre-Commissioning**	
	10.01) System Instrument Index	
	10.02) Instrument Data Sheets	
	10.03) Instrument Cable Schedule	
	10.04) System Instrumentation Wiring Diagram	
	10.05) Hook-up Drawing (Mechanical & Pneumatic)	
	10.06) Instruments Cables Schedule	
	10.07) Instruments Cables Laying Certificates	
	10.08) Instruments Cables Termination Certificates	
	10.09) Instruments Cables Testing Certificates	
	10.10) Instruments Calibration Certificates	
	10.11) Instrument Loop Checks Certificates	
	10.12) Instrumentation Pre-Commissioning Check Lists	
	10.13) Instrumentation Supplier Check Lists & Reports	
11	**Instrumentation Commissioning**	
	11.01) Instrumentation Function Test Certificates	
	11.02) Instrumentation Supplier Check Lists & Reports	
Sr.	**Pre-Commissioning and Commissioning Dossier Index**	**Applicable (Yes/No)**
12	**Electrical Pre-Commissioning**	
	12.01) System Electrical Index	
	12.02) Electrical Drawings	
	12.03) Motor Datasheets	
	12.04) Electrical Cables Schedule	
	12.05) Electrical Cables Laying Certificates	
	12.06) Electrical Cables Testing Certificates	
	12.07) Electrical Cables Termination Certificates	
	12.08) FAT Reports & Certificates	
	12.09) SAT Reports & Certificates	
	12.10) Electrical Pre-Commissioning Check Lists	
	12.11) Electrical Supplier Check Lists & Reports	

13	**Electrical Commissioning**	
	13.01) Electrical -Commissioning Check Lists	
	13.02) Electrical Supplier Check Lists & Reports	
14	**Red Marked-up Drawings**	
	14.01) P&ID	
	14.02) Instrumentation Drawings	
	14.03) Electrical Drawings	

Enppi PETROJET

Project: 01251-100
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

Pre-commissioning and Commissioning Dossier Content:

Section	Description		Status
1-	Mechanical Completion Certificate (MCC) Ready For Start-up (RFSU)		
2-	System Punch Lists		
3-	System Limits Marked Up		
4-	FAT Test Report & Certificates		
5-	System Index.		
6.A-	Electrical Pre-commissioning		
	6.A.1	General Arrangement and Wiring Diagrams	
	6.A.2	Single line Diagram	
	6.A.3	Electrical Panel Schedule	
	6.A.4	Electrical Cable Schedule	
	6.A.5	Pre-Commissioning Check List	
6.B-	Electrical Commissioning		
	6.B.1	Commissioning Check List	
7-	Red Mark-Up Drawings (If Any)		

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

1-Mechanical Completion Certificate (MCC)

Enppi

SYSTEM MECHANICAL COMPLETION CERTIFICATE (MCC)

PROJECT TITLE	:	CRUDE OIL TANK FARM(AGROOD AREA
PROJECT No	:	1251-100
SYSTEM NAME	:	Substation 11/0.4KV Dry Type Distribution Transformers & Busducts System
SYSTEM ID	:	030-EL-004

THIS IS TO CERTIFY THAT:

- **THE ABOVE SYSTEM HAS BEEN FABRICATED, ERECTED, INSTALLED AND TESTED TO THE REQUIREMENTS OF THE CONTRACT DRAWINGS, SPECIFICATIONS, THE APPLICABLE CODES AND STANDARDS.**
- **ALL PRE-COMMISSIONING RELEVANT ACTIVITIES, TESTS, INSPECTIONS AND CHECKS HAVE BEEN CARRIED OUT FOR THIS SYSTEM AND FOUND ACCEPTABLE.**
- **Q/C DOCUMENTATION OF THE ABOVE SYSTEM HAS BEEN AUDITED BY THE CUSTOMER SITE QUALITY CONTROL AND FOUND COMPLETED.**
- **ALL PUNCH LIST ITEMS CATEGORY (A) IN THIS SUBSYSTEM WERE CLEARED.**
- **THIS SYTEM IS MECHANICALLY COMPLETED ON THE DATE** 20/06/2021 **AND READY FOR COMMISSIONING (RFC) WITH THE FOLLOWING EXCEPTIONS.**

EXCEPTIONS :

- لم يتم عمل ايصالات Trans. & busduct بواسطة مقاولي (بضع)

NOTE: ACCEPTANCE OF THE ABOVE SYSTEM DOES NOT RELIEVE ENPPI/CONSTRUCTION CONTRACTOR FROM THEIR CONTRACTUAL OBLIGATIONS AND RESPONSIBILITIES.

COMPANY	PETROJET	ENPPI	PPC
NAME		Mohamed Abbas	
TITLE		Site Mgr.	
SIGNATURE			
DATE			

10000-000-KM2-FRM-0002 (10/13)

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

2- Ready for Startup Certificate (RFSU)

PETROJET Enppi EGPC

READY FOR START UP CERTIFICATE

PROJECT TITLE	:	EGPC CRUDE OIL TANK FARMS PROJECT (AGROOD-02)
PROJECT No.	:	1251-100
SYSTEM /AREA /PLANT	:	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System
SYSTEM /AREA /PLANT No.	:	030-EL-004

THIS IS TO CERTIFY THAT:

- THE MENTIONED SYSTEM /AREA /PLANT IS READY FOR START UP WHERE ALL MECHANICAL WORKS, PRECOMMISSIONING AND COMMISSIONING ACTIVITIES HAVE BEEN SUCCESSFULLY COMPLETED.
- MECHANICAL COMPLETION CERTIFICATE(S) FOR THE MENTIONED SYSTEM / AREA / PLANT HAVE BEEN SIGNED.
- ISSUANCE OF THIS READY FOR START UP CERTIFICATE(S) SHALL NOT RELIEVE CONTRACTOR(S) FROM THEIR OBLIGATIONS TO COMPLETE THE REMAINING SYSTEMS NOR FROM THEIR WARRANTY OBLIGATIONS AND OTHER PROVISIONS OF THE CONTRACT.
- THE FOLLOWING EXCEPTIONS AGREED TO BE CLEARED AFTER START UP AND WILL NOT PREVENT START UP ACTIVITIES.

EXCEPTIONS :

COMPANY	CONSORTIUM	PPC
NAME	Ahmed El Shafie	Mohamed Ibrahim
TITLE	Commissioning Manager	Elec - engineering
SIGNATURE		
DATE	30-6-2021	4-7-2021

10000-000-EK8-FRM-0006 (03/15)

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

3- System Punch Lists

PETROJET | Enppi | **PUNCH LIST** | EGPC

PROJECT TITLE : CRUDE OIL TANK FARM PROJECT (AGROOD AREA)

PROJECT NUMBER : 01251-100 | **DISCIPLINE:** Electrical

Substation 11/0.4KV Dry Type Distribution Transformers & Busducts System | **SYSTEM ID: 030-EL-04**

SUB-SYSTEM NAME: | **SUB-SYSTEM ID:**

NO	DESCRIPTION	CAT	ACTION BY	DISP	CLEARANCE APPROVED BY	
1	P-030-SUB-TR-1A to be installed.	A	PTJ	ELE		
2	P-030-SUB-TR-1B to be installed.	A	~	~		
3	G-030-SUB-TR-1A to be installed	A	~	~		
4	G-030-SUB-TR-1B to be installed.	A	~	~		
5	P_1-030-SUB-TR-1A to be installed	A	~	~		
6	P_1-030-SUB-TR-1B to be installed.	A	~	~		

CAT: CATEGORY(A,B,C) ,ACTION BY: (ENPPI,CONST.CONTRACTOR,SUPPLIER.....) , DISP: DESCIPLINE(PIP,MECH,ELECT,INST.....)

COMPANY	PTJ	ENPPI	PMC
NAME			M.Ibrahim
SIGN.			
DATE			

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

4- System Limits Marked Up P&ID

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

5- System Index

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

6- Piping Pre-Commissioning

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

6.01- Piping Test Packs

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

6.02- Piping Pre-commissioning Check Lists

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

7- Piping Commissioning

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

7.01- Service Test, GLT, CLT and N2 Purging Certificates

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

7.02- Piping Commissioning Check Lists

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

8- Mechanical Pre-Commissioning

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

8.01- System Mechanical Index

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

8.02- Equipment Drawings

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

8.03- Equipment Datasheets

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

8.04- Boxing-up Certificates

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

8.05- Grouting Certificates

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

8.06- Pre-Alignment Certificates

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

8.07- Mechanical Pre-Commissioning Checklists

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

9- Mechanical Commissioning

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

9.01- Final Alignment Certificates

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

9.02- Motor Solo Run Certificates

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

9.03- Mechanical Run Test (MRT) Certificates

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

9.04- Mechanical Commissioning Checklists

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

9.05- Mechanical Supplier Check Lists & Reports

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

10- Instrumentation Pre-Commissioning

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

10.01- System Instrument Index

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

10.02- Instrument Data Sheets

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

10.03- Instrument Cable Schedule

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

10.03- Instrument Cable Schedule

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

10.04- System Instrumentation Wiring Diagram

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

10.05- Hook-up Drawing (Mechanical & Pneumatic)

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

10.06- Instruments Cables Schedule

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

10.07- Instruments Cables Laying Certificates

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

10.08- Instruments Cables Termination Certificates

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

10.09- Instruments Cables Testing Certificates

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

10.10- Instruments Calibration Certificates

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

10.11- Instrument Loop Checks Certificates

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

10.12- Instrumentation Pre-Commissioning Check Lists

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

10.13- Instrumentation Supplier Check Lists & Reports

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

11- Instrumentation Commissioning

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

11- Instrumentation Commissioning

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

11- Instrumentation Commissioning

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

11.01- Instrumentation Function Test Certificates

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

11.02- Instrumentation Supplier Check Lists & Reports

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

12- Electrical Pre-Commissioning

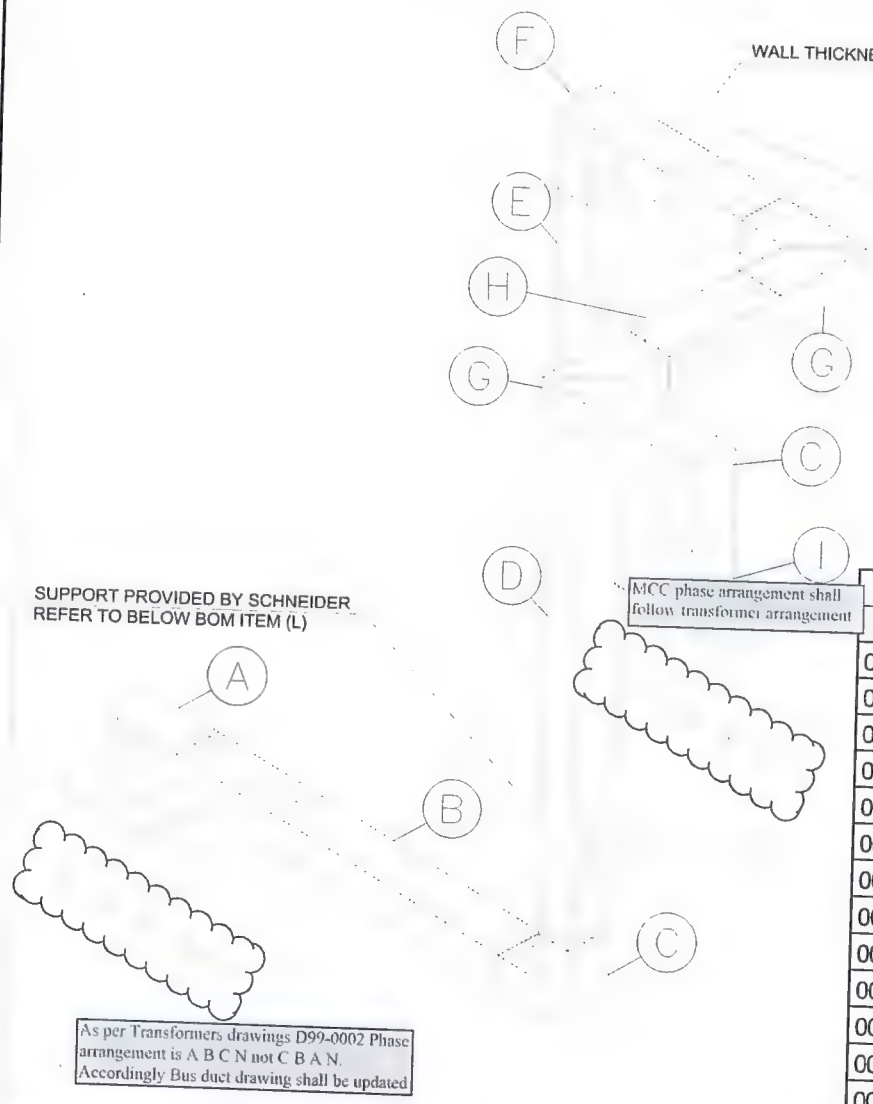
System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

12.01- System Electrical Index

030-EL-004	Substation 11/0.4KV Dry Type Distribution Transformers &	Electrical	030-SUB-TR-1A	6.6/0.4KV Dry Type Distrbution Transformers	Checklist	EL-02 A /EL-30 A /EL-31
030-EL-004	Substation 11/0.4KV Dry Type Distribution Transformers &	Electrical	030-SUB-TR-1B	6.6/0.4KV Dry Type Distrbution Transformers	Checklist	EL-02 A /EL-30 A /EL-31
030-EL-004	Substation 11/0.4KV Dry Type Distribution Transformers &	Electrical	P-030-SUB-TR-1A	HV Cable	Checklist	EL-31 A
030-EL-004	Substation 11/0.4KV Dry Type Distribution Transformers &	Electrical	P-030-SUB-TR-1B	HV Cable	Checklist	EL-31 A
030-EL-004	Substation 11/0.4KV Dry Type Distribution Transformers &	Electrical	030-SUB-LVBD-1A	Low Voltage Bus Ducts	Checklist	EL-07 A
030-EL-004	Substation 11/0.4KV Dry Type Distribution Transformers &	Electrical	030-SUB-LVBD-1B	Low Voltage Bus Ducts	Checklist	EL-07 A
030-EL-004	Substation 11/0.4KV Dry Type Distribution Transformers &	Electrical	G-030-SUB-TR-1A	LV Cable	Checklist	EL-31 A
030-EL-004	Substation 11/0.4KV Dry Type Distribution Transformers &	Electrical	G-030-SUB-TR-1B	LV Cable	Checklist	EL-31 A
030-EL-004	Substation 11/0.4KV Dry Type Distribution Transformers &	Electrical	P1-030-SUB-TR-1A	LV Cable	Checklist	EL-31 A
030-EL-004	Substation 11/0.4KV Dry Type Distribution Transformers &	Electrical	P1-030-SUB-TR-1B	LV Cable	Checklist	EL-31 A

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

12.02- Electrical Drawings



LV BUSDUCT DESIGN FOR 000-SUB-LVBD-1B
ARE TYPICAL FOR BELOW TAG LIST AS SHOWN

- 010-SUB-LVBD-1B
- 020-SUB-LVBD-1B
- 021-SUB-LVBD-1B
- 022-SUB-LVBD-1B
- 030-SUB-LVBD-1B
- 031-SUB-LVBD-1B
- 070-SUB-LVBD-1B

LVBD : 000-SUB-LVBD-1B COPPER 2500A

RUN	ITEM	CATALOGUE	QTY	LENGTH	DESCRIPTION
000-1B	A	CFD2525G22LEFES11F11M65	1	558	Edgewise Elbow with Flanged End
000-1B	B	CFD2525G66STM65	1	1676	Feeder Straight
000-1B	C	CFD2525G22LES11B11M65	2	558	Edgewise Elbow
000-1B	D	CFD2525G8STM65	1	2438	Feeder Straight
000-1B	E	CFD2525G34STM65	1	864	Feeder Straight
000-1B	F	CFD2525G45LES34B11M65	1	1143	Edgewise Elbow
000-1B	G	CFD2525G26LFS13B13M65	2	660	Flatwise Elbow
000-1B	H	CFD2525G22STM65	1	559	Feeder Straight
000-1B	I	CFD2525G10FEBM65	1	254	Flanged End
000-1B	J	FLEX525	1	0	Flexible Link
000-1B	K	HF83F	4	0	Flatwise Hanger
000-1B	L	HFVS2	1	0	Spring Hanger
000-1B	M	AT22	1	0	Assembly Tool
000-1B	N	ACF13WF	2	0	Wall Flange

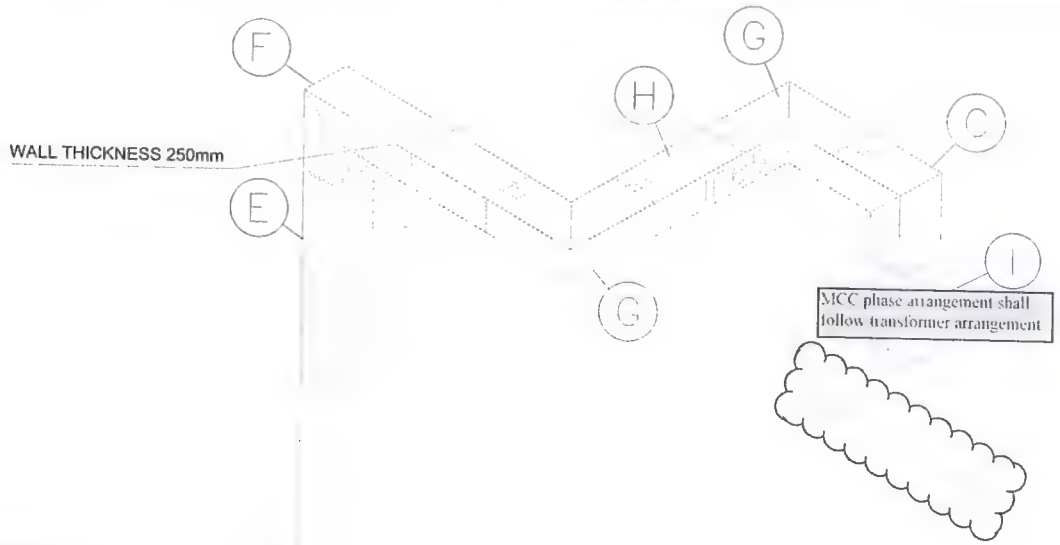
DRAWING NAME:
BUS DUCT ROUTING
GENERAL LAYOUT ARRANGEMENT
LVBD:000-SUB-LVBD-1B
ITEM LIST

CUSTOMER: ENPPI
PROJECT: EGPC

Schneider Electric

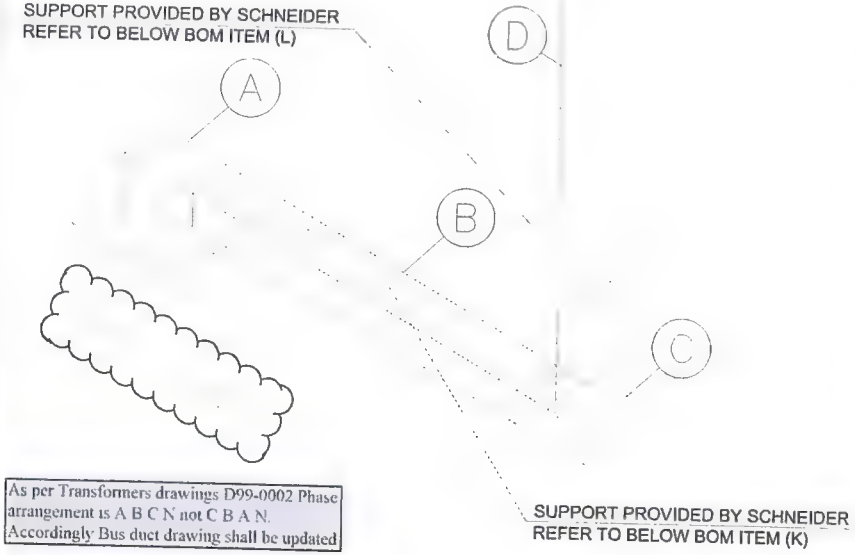
EO20008.01-01

Order No.	Ind	SHEET No.
EO20008.01	2	012



LV BUSDUCT DESIGN FOR 000-SUB-LVBD-1A
ARE TYPICAL FOR BELOW TAG LIST AS SHOWN

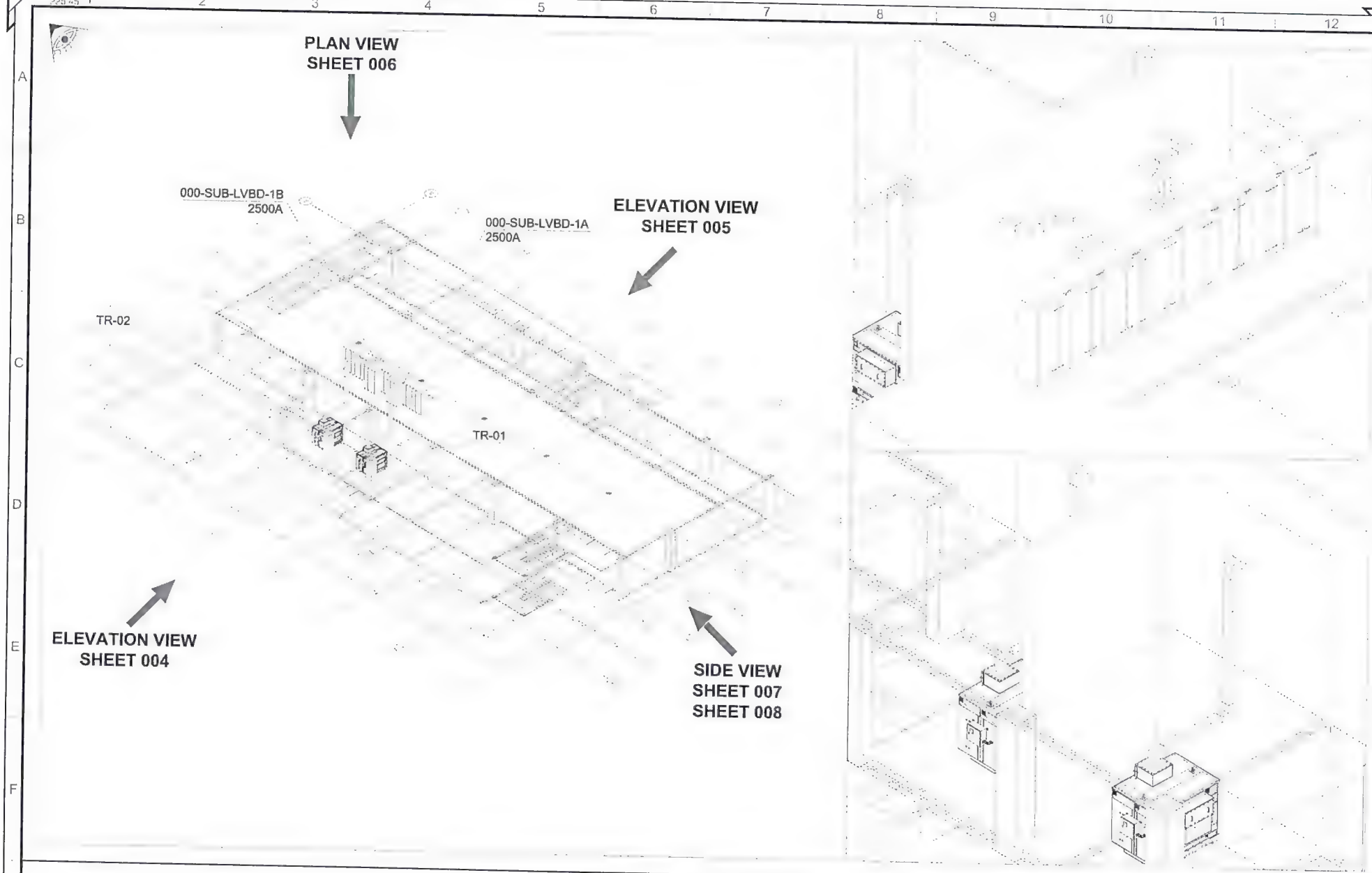
- 010-SUB-LVBD-1A
- 020-SUB-LVBD-1A
- 021-SUB-LVBD-1A
- 022-SUB-LVBD-1A
- 030-SUB-LVBD-1A
- 031-SUB-LVBD-1A
- 070-SUB-LVBD-1A



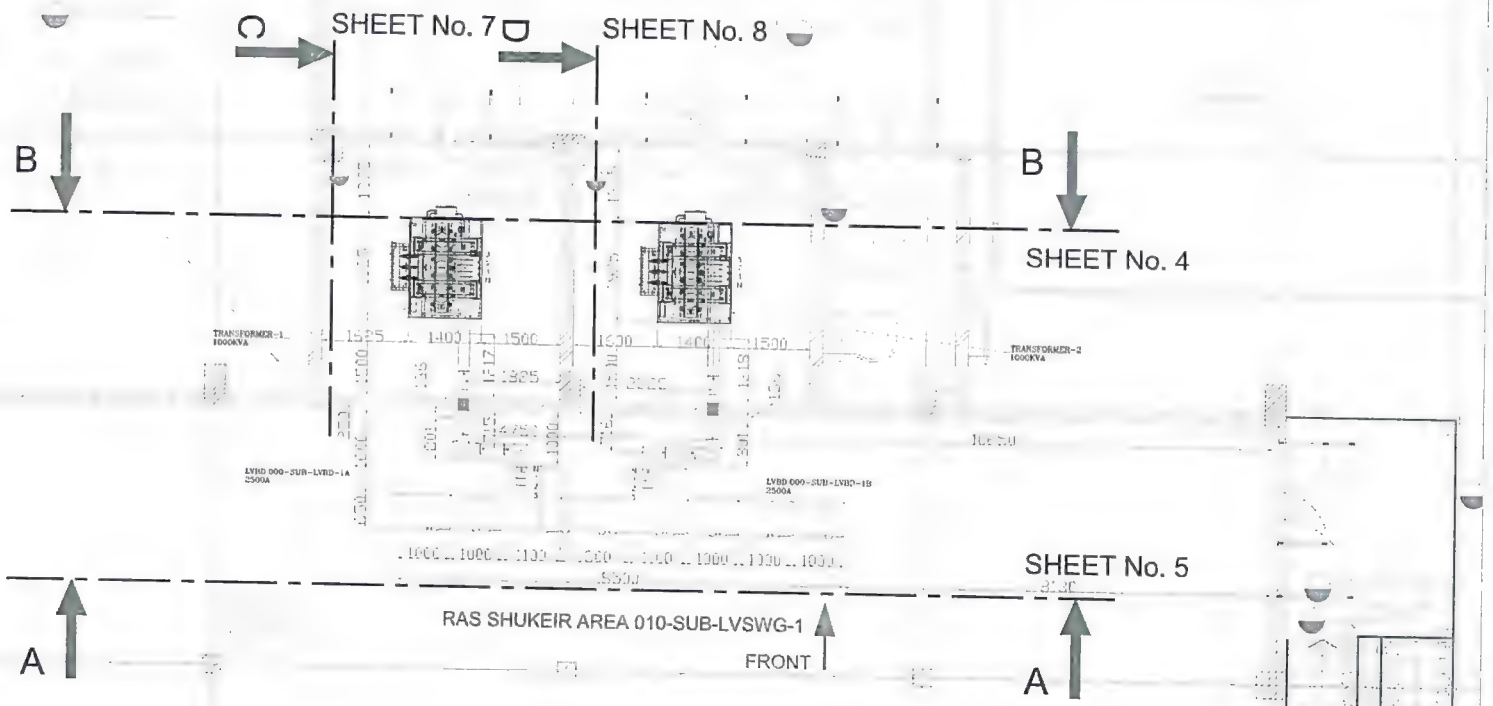
LVBD : 000-SUB-LVBD-1A COPPER 2500A

RUN	ITEM	CATALOGUE	QTY	LENGTH	DESCRIPTION
000-1A	A	CFD2525G22LEFES11F11M65	1	558	Edgewise Elbow with Flanged End
000-1A	B	CFD2525G66STM65	1	1676	Feeder Straight
000-1A	C	CFD2525G22LES11B11M65	2	558	Edgewise Elbow
000-1A	D	CFD2525G8STM65	1	2438	Feeder Straight
000-1A	E	CFD2525G34STM65	1	864	Feeder Straight
000-1A	F	CFD2525G45LES34B11M65	1	1143	Edgewise Elbow
000-1A	G	CFD2525G26LFS13B13M65	2	660	Flatwise Elbow
000-1A	H	CFD2525G18STM65	1	457	Feeder Straight
000-1A	I	CFD2525G10FEBM65	1	254	Flanged End
000-1A	J	FLEX525	1	0	Flexible Link
000-1A	K	HF83F	4	0	Flatwise Hanger
000-1A	L	HFVS2	1	0	Spring Hanger
000-1A	M	AT22	1	0	Assembly Tool
000-1A	N	ACF13WF	2	0	Wall Flange

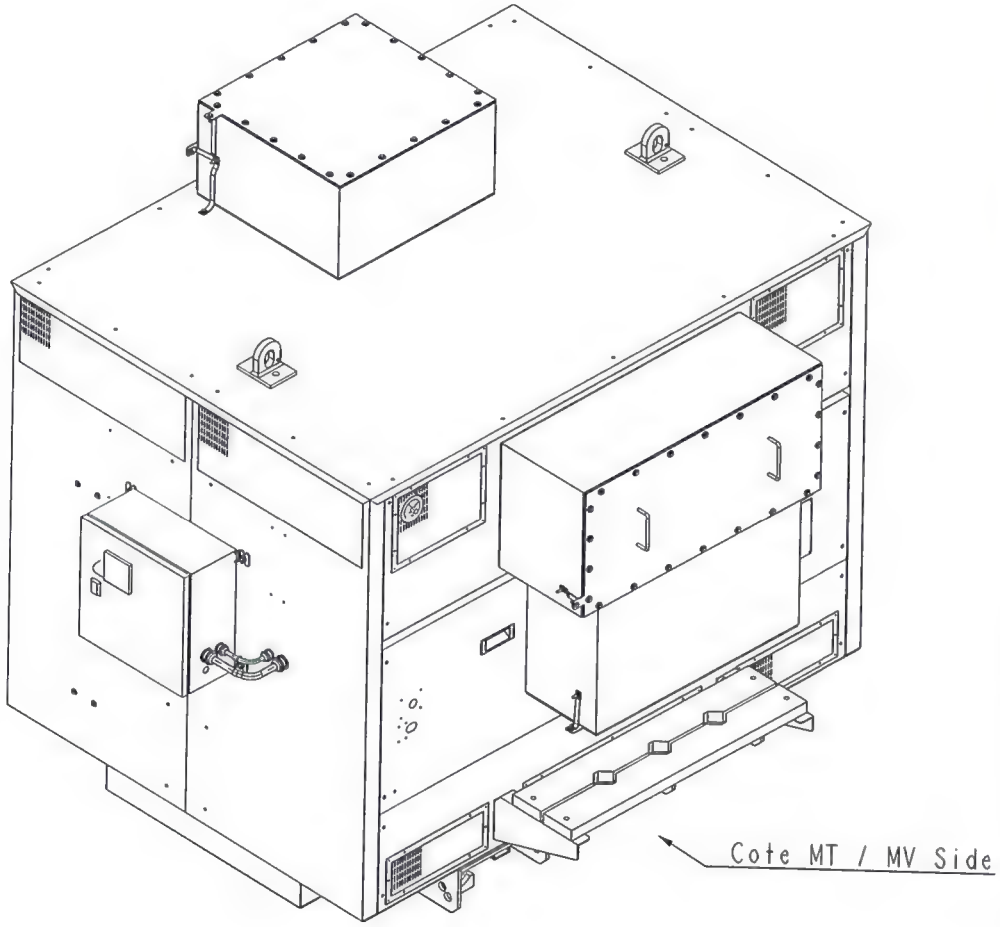
DRAWING NAME:	CUSTOMER:	ENPPI	Schneider Electric	EO20008.01-01	
BUS DUCT ROUTING GENERAL LAYOUT ARRANGEMENT LVBD:000-SUB-LVBD-1A ITEM LIST	PROJECT:	EGPC		Order No. EO20008.01	Ind 2 / SHEET No. 011



DRAWING NAME: BUS DUCT ROUTING GENERAL LAYOUT ARRANGEMENT 3-DIMENSIONS EGPC TYPICAL SUBSTATION	CUSTOMER: ENPPI PROJECT: EGPC	Schneider Electric	EO20008.01-01
			Order No. EO20008.01 · Ind 2 · SHEET No. 003



DRAWING NAME:	CUSTOMER:	ENPPI	Schneider Electric	EO20008.01-01	
BUS DUCT ROUTING GENERAL LAYOUT ARRANGEMENT PLAN VIEW	PROJECT:	EGPC		Order No.	Ind / SHEET No.
				EO20008.01	2 / 006



024	OUVERTURE RACCORDEMENT MALT BAS	BOTTOM PLATE FOR EARTHING NEUTRAL CONNECTION
023	GUIDE CABLE MALT NEUTRE BT	EARTHING LV NEUTRAL CABLE GUIDE
022	PLAGE DE RACCORDT DE NEUTRE	EARTHING CONNECTION ON THE NEUTRAL BAR
021	THERMOMETRE 2 CONTACTS	THERMOMETER 2 CTS
019	MANCHETTE BT IP55	LV EXTENTION BOX IP55
018	SUPPORT CABLE MT	MV CABLE SUPPORT
017	CAPOT MT IP55	MV CABLE BOX IP55
016	TRANSFORMATEUR DE COURANT 2000/1A 5P20 10VA	CURRENT TRANSFORMER 2000/1A 5P20 10VA
015	APPUI VERIN	JACKING PAD
014	SABOT AMORTISSEUR	SHOCK ABSORBER
013	COFFRET DE FILERIE	WIRING BOX
012	TRAPPE ACCES AU REP 1-2	SIDE PLATE FOR MARK 1-2
011	OUVERTURE RACCORDEMENT BT	TOP PLATE FOR LV CONNECTION
010	OUVERTURE RACCORDEMENT MT BAS	BOTTOM PLATE FOR MV CONNECTION
009	OUVERTURE RACCORDEMENT MT	TOP PLATE FOR MV CONNECTION
008	PLAQUE SIGNALETIQUE + PLAQUE SCHEMA + PLAQUE TAG	RATING PLATE + DIAGRAM PLATE + TAG PLATE
007	LEVAGE	LIFTING
006	PRISE DE TERRE M10	EARTHING TERMINAL M10
005	GALET DE ROULEMENT ORIENTABLE	BI-DIRECTIONAL ROLLERS
004	PLAGE DE RACCORDT NEUTRE BT	LV NEUTRAL TERMINAL
003	PLAGE DE RACCORDT BT	LV PHASE TERMINAL
002	REGLAGE DE TENSION MT	MV OFF TAPPINGS
001	RACCORDEMENT MT	MV TERMINALS

TRANSFORMATEUR TRIPHASE	THREE PHASED TRANSFORMER
ENROBE TRIHAL	CASTRESIN TRIHAL
DEGRE DE PROTECTION	DEGREE OF PROTECTION
IP31 IK7 SAUF FOND IP21	IP31 IK7 EXCEPT THE BOTTOM IP21

	IEC 60076-11	
PUISSANCE	RATED POWER	1000 kVA
FREQUENCE	FREQUENCY	50 Hz
MOYENNE TENSION	MEDIUM VOLTAGE	6600 V
REGLAGE	OFF VOLTAGE TAPPING	+ 5.00+ 2.50 %
REGLAGE	OFF VOLTAGE TAPPING	- 5.00- 2.50 %
BASSE TENSION A VIDE	LOW VOLTAGE AT NO LOAD	400 V
UCC	IMPEDANCE VOLTAGE	5 %
GROUPE DE COUPLAGE	VECTOR GROUP	D yn11
MODE DE REFROIDISSEMENT	COOLING	AN
CLASSE THERMIQUE	THERMAL CLASS	F
MASSE TOTALE	TOTAL WEIGHT	3505 kg
NIVEAU D ISOLEMENT MT	MV INSULATION LEVEL	7.2 kV
BT : CUIVRE	LV : COPPER	
MT : CUIVRE	MV : COPPER	
L x l x h		2148 x 1770 x 1981 mm

Teinte finale — Final colour — RAL 9002

Ind	Dessine/Verifie	Le	Validation	Modification
E	FRIGOUT	09/07/2020	FRANCOIS	Modification perçages connexions BT
D	FRIGOUT	19/06/2020	FRANCOIS	Ajout detail gaine à barre
O	FRIGOUT	22/04/2020	FRANCOIS	Creation

Echelle

PLAN D'ENCOMBREMENT
ASSEMBLY DRAWING

Schneider Electric

Dessine/Verifie	Le 22/04/2020	Par FRIGOUT
Validation	Le 22/04/2020	Par FRANCOIS

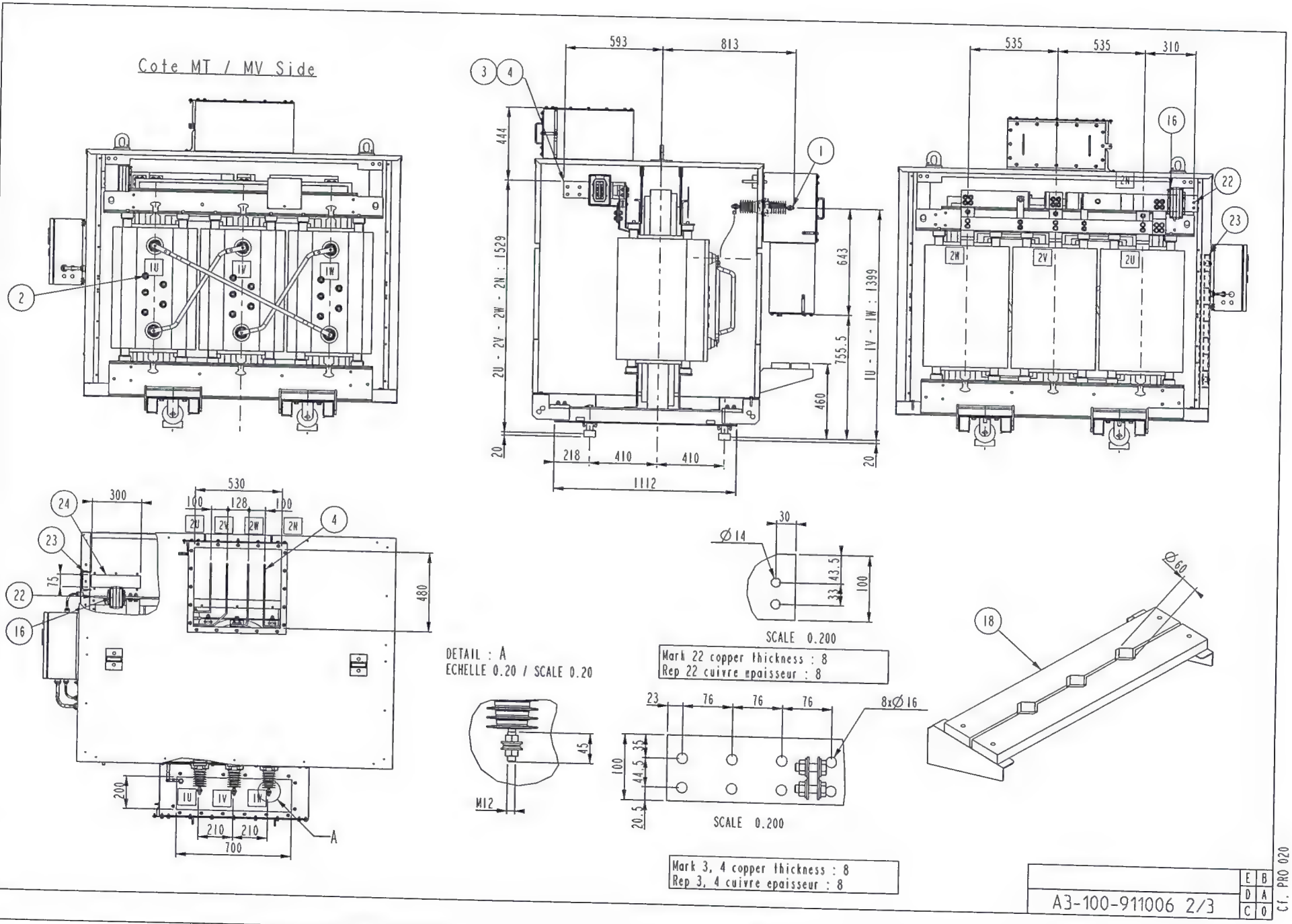
A3-100-911006 1/3

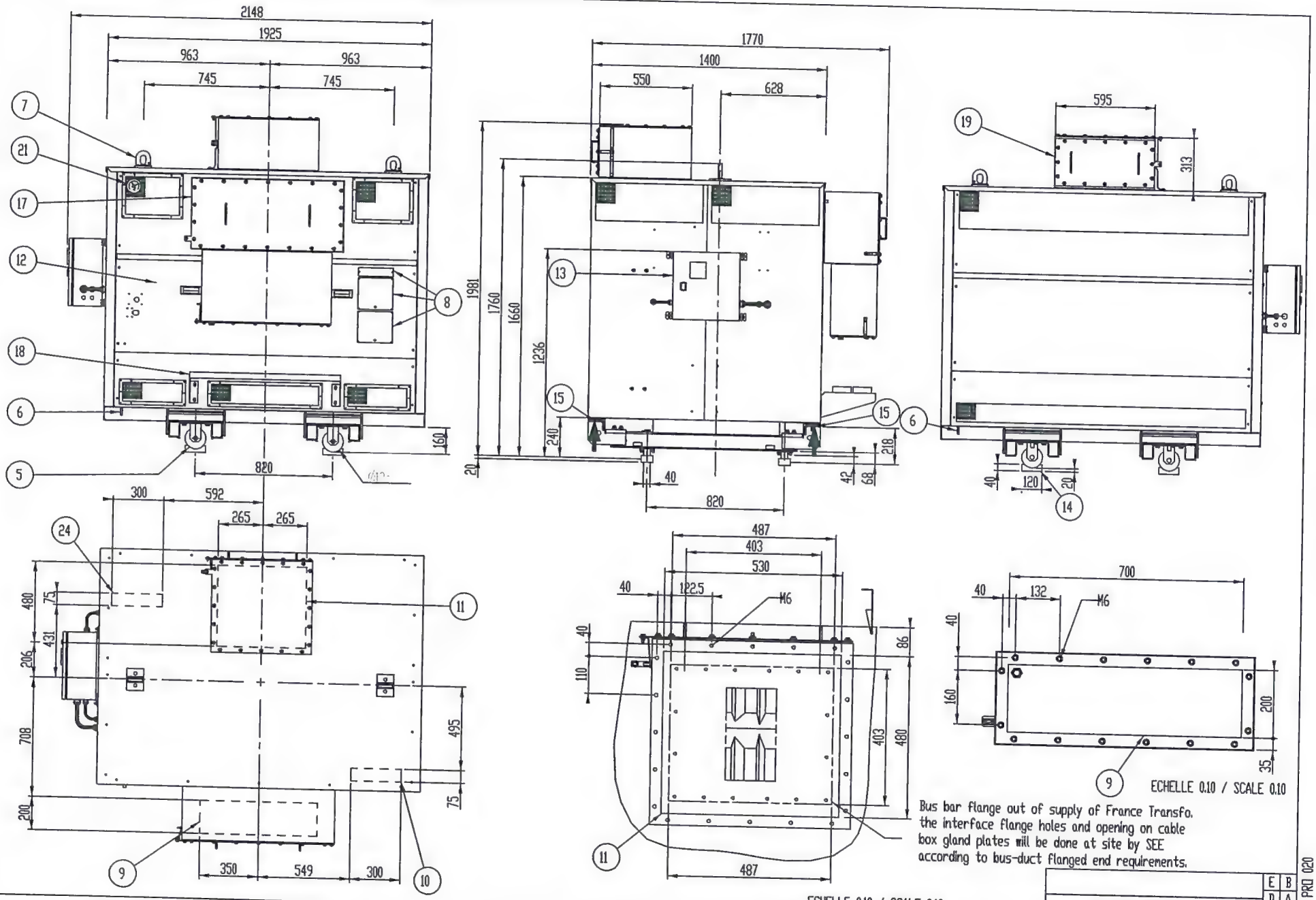
E	B
D	A
C	O

Cf. PRO 020

TOLERANCES : RACCORDEMENTS MT ET BT + OU - 20 mm
TOLERANCES GENERALES : + OU - 10 mm

TOLERANCES : + / -20 mm MV AND LV CONNECTIONS
GENERAL TOLERANCES : + / - 10 mm


Cote MT / MV Side
593
813
535
535
310
444
2U - 2V - 2W - 2N : 1529
643
755.5
460
1U - 1V - 1W : 1399
20
218
410
410
1112
530
100
128
100
300
480
75
200
210
210
700
A
DETAIL : A
ECHELLE 0.20 / SCALE 0.20
M12
45
Ø14
30
43.5
33
100
SCALE 0.200
Mark 22 copper thickness : 8
Rep 22 cuivre epaisseur : 8
23
76
76
76
8xØ16
35
44.5
20.5
SCALE 0.200
Ø60
Mark 3, 4 copper thickness : 8
Rep 3, 4 cuivre epaisseur : 8
A3-100-911006 2/3
Cf. PRO 020


2148
1925
963
963
745
745
7
21
17
12
8
18
6
5
160
820
1770
1400
550
628
1981
1760
1660
1236
13
15
240
20
40
820
42
68
218
595
19
313
40
120
20
14
300
592
265
265
24
11
480
75
431
206
708
495
75
200
9
350
549
300
10
487
403
530
40
122.5
M6
86
110
403
480
487
11
700
40
132
M6
160
200
35
9
ECHELLE 0.10 / SCALE 0.10
Bus bar flange out of supply of France Transfo.
the interface flange holes and opening on cable
box gland plates will be done at site by SEE
according to bus-duct flanged end requirements.
ECHELLE 0.10 / SCALE 0.10
A3-100-911006 3/3
E B
D A
C 0
C.F. PRI 020

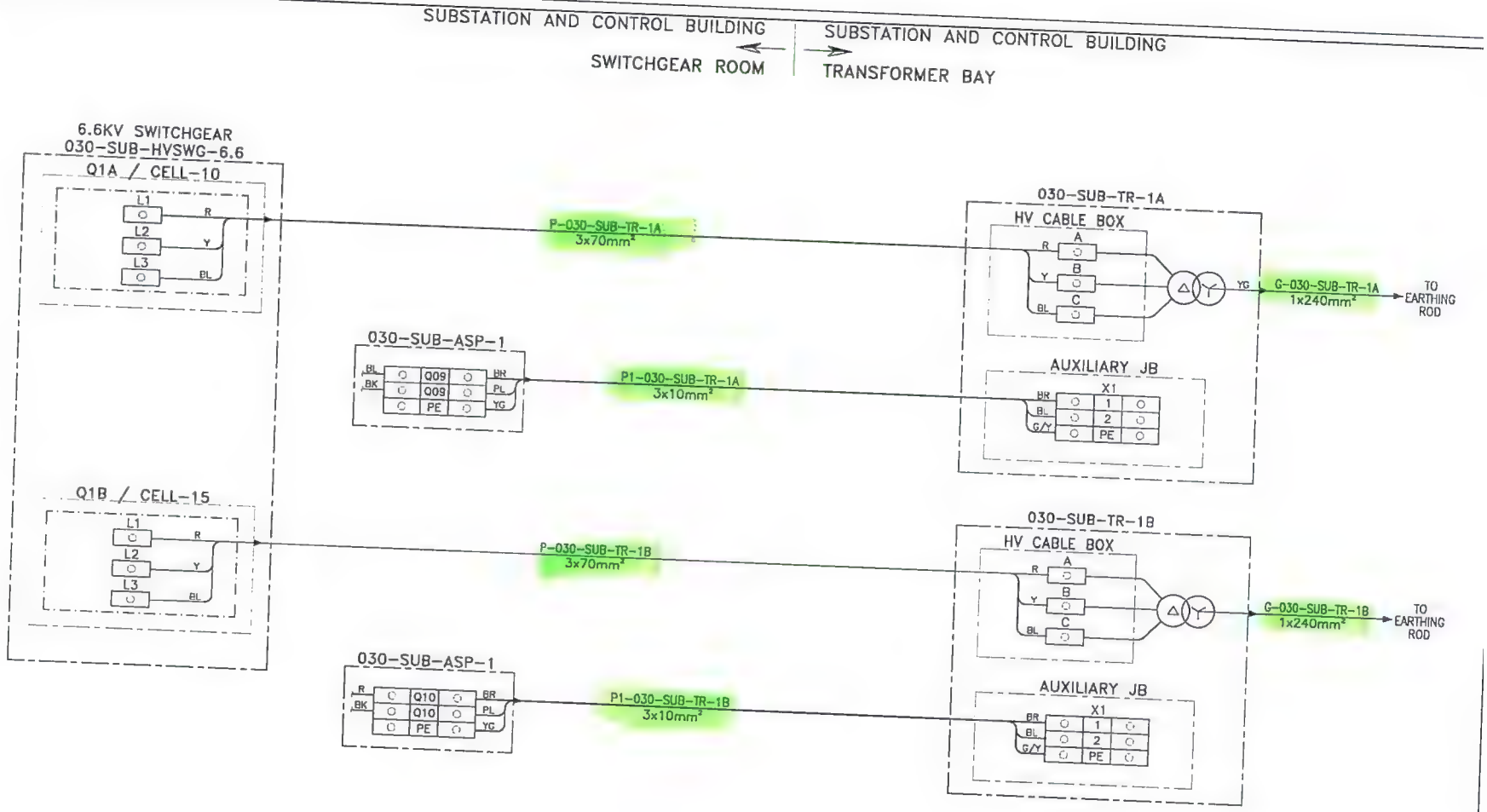
System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

12.03- Motor Datasheets

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

12.04- Electrical Cables Schedule

PAGE	Cable Mark	GL1	FROM	TO	GL2	CABLEService	Service Voltage	KW	Size	Type	L
10	P-030-SUB-TR-1A	WP	030-SUB-HVSWG-6.6 (Q1A)	030-SUB-TR-1A	WP	HV POWER FEEDER	6600VAC	800	3x70	3A	60
10	P1-030-SUB-TR-1A	WP	030-SUB-ASP-1 (Q09)	030-SUB-TR-1A (AUX. JB)	WP	1PH POWER FEEDER	230VAC		3x10	3E	40
10	G-030-SUB-TR-1A	WP	030-SUB-TR-1A	EARTHING PIT	WP	NEUTRAL EARTHING			1x240	G1	25
11	P-030-SUB-TR-1B	WP	030-SUB-HVSWG-6.6 (Q1B)	030-SUB-TR-1B	WP	HV POWER FEEDER	6600VAC	800	3x70	3A	60
11	P1-030-SUB-TR-1B	WP	030-SUB-ASP-1 (Q10)	030-SUB-TR-1B (AUX. JB)	WP	1PH POWER FEEDER	230VAC		3x10	3E	35
11	G-030-SUB-TR-1B	WP	030-SUB-TR-1B	EARTHING PIT	WP	NEUTRAL EARTHING			1x240	G1	25
13	030-SUB-LVBD-1A	-	030-SUB-TR-1A	030-SUB-LVSWG-1 (INC-A)	-	BUS DUCT	400VAC	2000A	-	-	-
13	030-SUB-LVBD-1B	-	030-SUB-TR-1B	030-SUB-LVSWG-1 (INC-B)	-	BUS DUCT	400VAC	2000A	-	-	-



NOTICE

EGPC
THE EGYPTIAN GENERAL PETROLEUM CO.
الهيئة العامة المصرية للبترول
EGPC

FOR : THE EGYPTIAN GENERAL PETROLEUM CORPORATION (EGPC) لاجل الهيئة العامة المصرية للبترول

AT : AGROOD الموقع : عجرود السويس

EGPC CRUDE OIL TANK FARM
AGROOD AREA (MODULE-1)
ELECTRICAL INTERCONNECTION & WIRING DIAGRAM
6.6/0.4kV DRY TYPE TRANSFORMERS
(030-SUB-TR-1A/B)

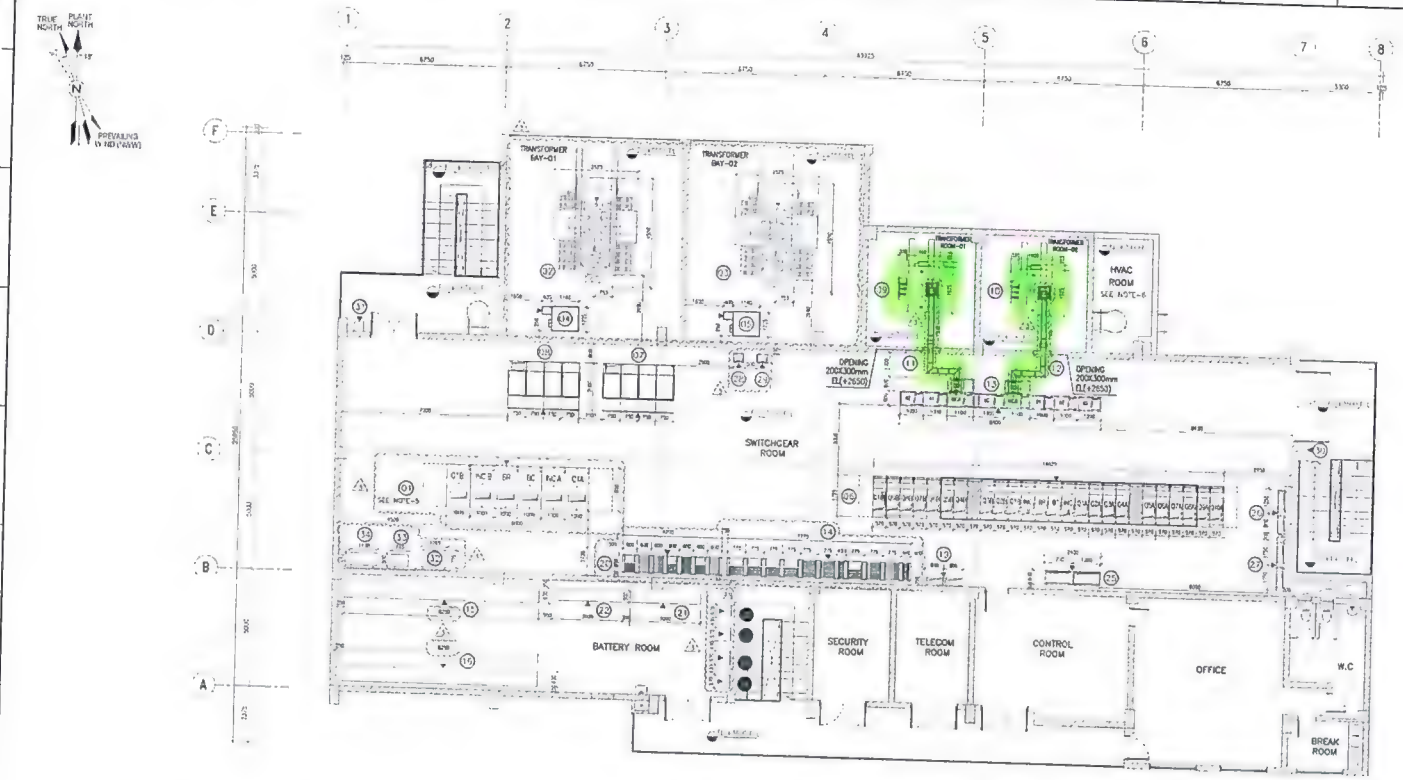
الشركة الهندسية للصناعات البترولية والكيماوية
Enppi إنبي
ENGINEERING FOR THE PETROLEUM AND PROCESS INDUSTRIES

SCALE	DOCUMENT NUMBER	SHEET	REVISION
NONE	01251-100-030-EWI-001	011 OF 078	2

A3 SIZE: 297 X 420

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

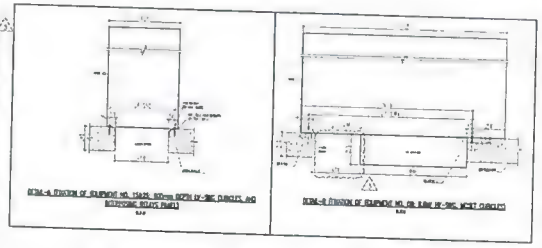
12.05- Electrical Cables Laying Certificates

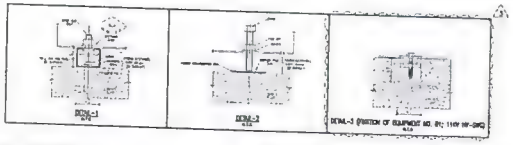


ELECTRICAL EQUIPMENT LIST

EQUIPMENT NO.	EQUIPMENT TAG	DESCRIPTION	FIXATION
01	030-SUB-MVSWG-11	11kV, 1250A AIR INSULATED SWITCHGEAR	FLOOR
02	030-SUB-PTR-1A	11/0.5kV, 8MVA OIL POWER TRANSFORMER	FLOOR
03	030-SUB-PTR-1B	11/0.5kV, 8MVA OIL POWER TRANSFORMER	FLOOR
04	030-SUB-NER-1A	6.6/1kV, 200A/10kΩ NEUTRAL EARTHING RESISTOR	FLOOR
05	030-SUB-NER-1B	6.6/1kV, 200A/10kΩ NEUTRAL EARTHING RESISTOR	FLOOR
06	030-SUB-MVSWG-6.6	6.6kV, 1250A AIR INSULATED SWITCHGEAR	FLOOR
07	030-SUB-PFC-1A	6.6kV, 360kVAR POWER FACTOR CORRECTION	FLOOR
08	030-SUB-PFC-1B	6.6kV, 360kVAR POWER FACTOR CORRECTION	FLOOR
09	030-SUB-TR-1A	6.6/0.4kV, 1000kVA DRY-TYPE DISTRIBUTION TRANSFORMER	FLOOR
10	030-SUB-TR-1B	6.6/0.4kV, 1000kVA DRY-TYPE DISTRIBUTION TRANSFORMER	FLOOR
11	030-SUB-LVSD-1A	0.4kV, 2000A LOW VOLTAGE BUS DUCT	----
12	030-SUB-LVBD-1B	0.4kV, 2000A LOW VOLTAGE BUS DUCT	----
13	030-SUB-LVSWG-1	0.4kV, 2000A AIR INSULATED SWITCHGEAR	FLOOR
14	030-SUB-ACUPS-1	40kVAC, 50Hz AC UNINTERRUPTED POWER SUPPLY	FLOOR
15	030-SUB-ACUPS-1-BATT-A	BATTERY RACK-A FOR AC UPS	FLOOR
16	030-SUB-ACUPS-1-BATT-B	BATTERY RACK-B FOR AC UPS	FLOOR
17	030-SUB-ACUPS-CB-A	BATTERY RACK-A CIRCUIT BREAKER BOX FOR AC UPS	WALL
18	030-SUB-ACUPS-CB-B	BATTERY RACK-B CIRCUIT BREAKER BOX FOR AC UPS	WALL

EQUIPMENT NO.	EQUIPMENT TAG	DESCRIPTION	FIXATION
19	030-SUB-UPDP-1	UPS POWER DISTRIBUTION PANEL	WALL
20	030-SUB-DCUPS-1	110VDC, 75A DC UNINTERRUPTED POWER SUPPLY	WALL
21	030-SUB-DCUPS-1-BATT-A	BATTERY RACK-A FOR DC UPS	FLOOR
22	030-SUB-DCUPS-1-BATT-B	BATTERY RACK-B FOR DC UPS	FLOOR
23	030-SUB-DCUPS-CB-A	BATTERY RACK-A CIRCUIT BREAKER BOX FOR DC UPS	WALL
24	030-SUB-DCUPS-CB-B	BATTERY RACK-B CIRCUIT BREAKER BOX FOR DC UPS	WALL
25	030-SUB-IRP-1	INTERPOSING RELAY PANEL	FLOOR
26	030-SUB-ASP-1	AUXILIARY SERVICE PANEL	FLOOR
27	030-SUB-LPDP-1	INDOOR LIGHTING AND SMALL POWER DISTRIBUTION PANEL	FLOOR
28	030-SUB-AVR-1A	AVR PANEL FOR ON-LOAD TAP CHANGER OF 030-SUB-PTR-1A	WALL
29	030-SUB-AVR-1B	AVR PANEL FOR ON-LOAD TAP CHANGER OF 030-SUB-PTR-1B	WALL
30	030-SUB-EPS-1	SUBSTATION EMERGENCY PUSH BUTTON	WALL
31	030-SUB-EPS-2	SUBSTATION EMERGENCY PUSH BUTTON	WALL
32	------	6.6kV HV SWG LIFTING TRUCK	----
33	------	6.6kV HV SWG EARTHING TRUCK	----
34	------	LV SWG LIFTING TRUCK	----





REFERENCE DRAWING AND DOCUMENTS

01251-100-030-KPP-002	AGROOD AREA (MODULE-1) PLOT PLAN
01251-100-030-ACL-001	AGROOD AREA (MODULE-1) MASTER EQUIPMENT LIST
01251-100-030-CBD-221	SUBSTATION CELLAR FLOOR PLAN
01251-100-030-CBD-222	SUBSTATION FIRST FLOOR PLAN
01251-100-030-KEE-001	AGROOD AREA (MODULE-1) GENERAL ELECTRICAL SINGLE LINE DIAGRAM
01251-100-000-KEE-002	ELECTRICAL SINGLE LINE DIAGRAM 6.6kV HIGH VOLTAGE MOTOR CONTROL CENTER
01251-100-000-KEE-003	ELECTRICAL SINGLE LINE DIAGRAM LOW VOLTAGE MOTOR CONTROL CENTER
01251-100-000-EDB-001	ELECTRICAL DESIGN BASIS

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. ALL ELEVATIONS ARE IN MILLIMETERS.
3. THIS DRAWING IS CONCERNED ONLY WITH SUBSTATION ELECTRICAL EQUIPMENT
4. ALL EQUIPMENT SHALL BE BOTTOM ENTRY UNLESS OTHERWISE INDICATED
5. EQUIPMENT NO.1 SHALL BE SUPPLIED AND INSTALLED BY EGPC/GANAL ELECTRICAL DISTRIBUTION COMPANY.
6. ELECTRICAL EQUIPMENTS INSIDE HVAC ROOM (HVAC MCC & LCP) SHALL BE SUPPLIED AND INSTALLED BY PETROJET.

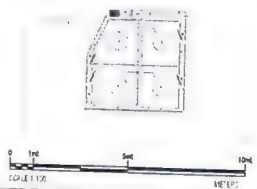
LEGEND

- ELECTRICAL EQUIPMENT
- FUTURE ELECTRICAL EQUIPMENT
- GLAND PLATE
- EQUIPMENT FRONT
- EQUIPMENT NUMBER
- DUMMY PANEL

ABBREVIATIONS

AC	ALTERNATING CURRENT	HV	HIGH VOLTAGE
AVR	AUTOMATIC VOLTAGE REGULATOR	INC	INCOMER CIRCUIT BREAKER
BC	BUS COUPLER CIRCUIT BREAKER	LV	LOW VOLTAGE
BR	BUS RISER	Q	CUTTOUTS CIRCUIT BREAKER
CB	CIRCUIT BREAKER	SWG	SWITCHGEAR
DC	DIRECT CURRENT	UPS	UNINTERRUPTIBLE POWER SYSTEM
DF	DISTANCE BETWEEN FIXATION POINTS		

KEY PLAN



REV	DATE	DESCRIPTION	BY	CHECKED	DESIGNED	APPROVED
3	24/08/20	RE-ISSUED FOR CONSTRUCTION	R.M	SH.A	M.R	M.A
2	03/06/20	ISSUED FOR CONSTRUCTION	M.M.A	SH.A	M.R	M.A
1	11/11/19	RE-ISSUED FOR DESIGN	M.M.A	SH.A/M.A	M.A.R	H.A
0	17/09/19	ISSUED FOR DESIGN	M.M.A	SH.A/M.A	M.A.R	H.A

NOTICE

THIS DRAWING HAS NOT BEEN PUBLISHED. IT IS THE SOLE PROPERTY OF ENPPI. IT IS LENT TO THE RECIPIENT FOR HIS CONSIDERATION AND USE ONLY AND UPON THE CONDITIONS AND AGREEMENTS FOLLOWING & CONSIDERATION OF THE LOAN PROVIDED. THE RECIPIENT PROMISES AND AGREES TO RETURN IT UPON REQUEST AND THAT IT SHALL NOT BE COPIED, DIRECT LENT OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY WITHOUT ENPPI WRITTEN CONSENT. NOR BE USED IN ANY WAY DETRIMENTAL TO THE INTERESTS OF ENPPI.

EGPC
THE EGYPTIAN GENERAL PETROLEUM CO.
الهيئة العامة المصرية للبترول
EGPC

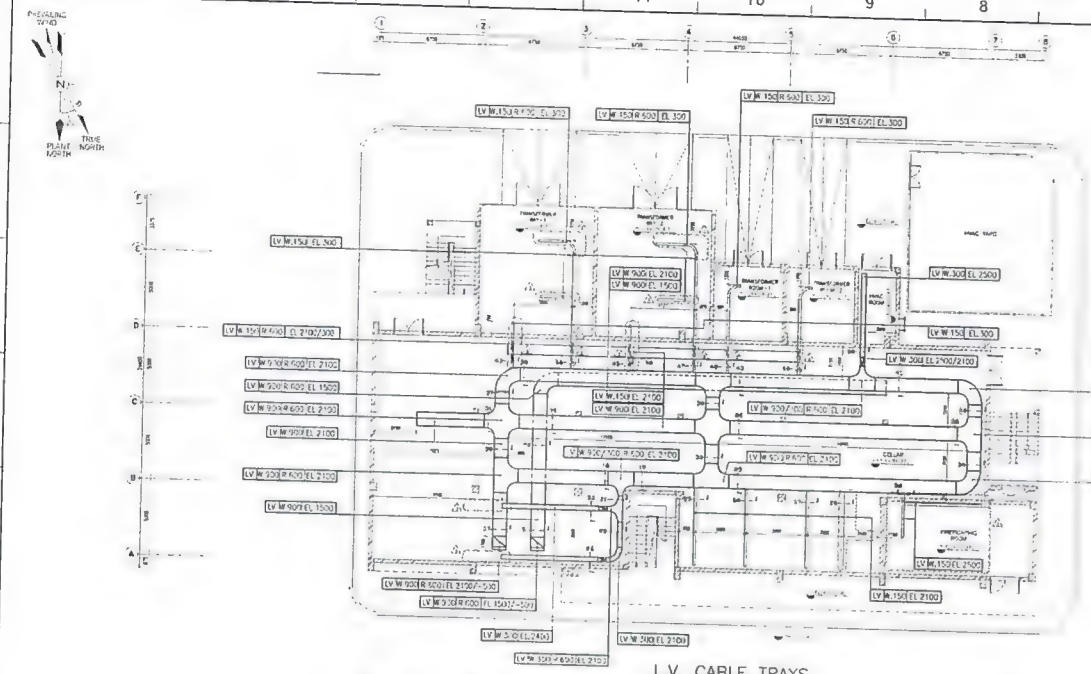
FOR : THE EGYPTIAN GENERAL PETROLEUM CORPORATION (EGPC) لاجل الهيئة العامة المصرية للبترول

AT : AGROOD الموقع : اجرود

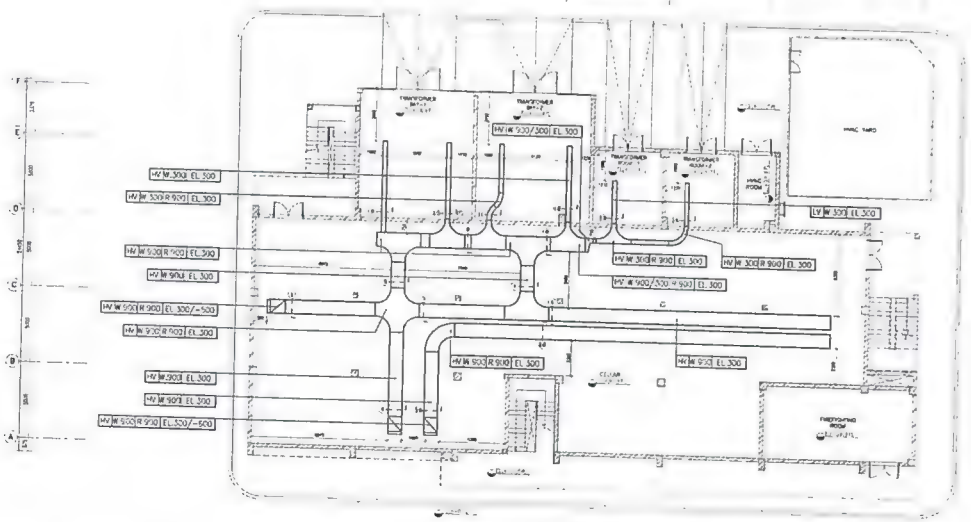
EGPC CRUDE OIL TANK FARM
AGROOD AREA (MODULE-1)
SUBSTATION ELECTRICAL EQUIPMENT LAYOUT

الشركة الهندسية للصناعات البترولية والكيماوية
Enppi إنبي
ENGINEERING FOR THE PETROLEUM AND PROCESS INDUSTRIES

SCALE	ENPPI DRAWING NUMBER	SHEET	REVISION
1:100	01251-100-030-EEB-001	1 OF 1	3

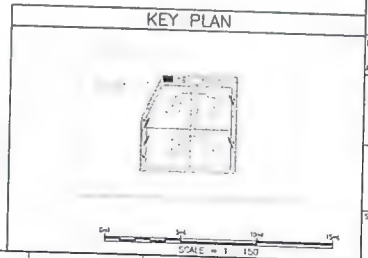


L.V. CABLE TRAYS



H.V. CABLE TRAYS

KEY PLAN



REFERENCE DRAWINGS AND DOCUMENTS

01251-100-030-CBD-221	SUBSTATION & CONTROL ROOM CELLAR FLOOR PLAN
01251-100-030-CBD-202	SUBSTATION & CONTROL ROOM FOUNDATION PLAN & DETAILS
01251-100-030-ECB-001	SUBSTATION ELECTRICAL EQUIPMENT LAYOUT
01251-100-030-ECS-003	OUTDOOR ELECTRICAL CABLE SECTIONS
01251-100-030-ECS-004	SUBSTATION ELECTRICAL CABLE SECTIONS
01251-100-030-ECL-501	OUTDOOR ELECTRICAL CABLE ROUTING LAYOUT
01251-100-030-ECS-001	AGROOD AREA (MODULE-1) ELECTRICAL CABLE SCHEDULE
01251-100-000-EDB-001	ELECTRICAL DESIGN BASIS

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE INDICATED
2. FOR BOTTOM-ENTRY SWITCHGEAR (HAVING TWO FLOORS), CABLES SHOULD ENTER SWITCHGEAR ROOM VIA THE FOLLOWING MEANS:
   - MINIMUM POSSIBLE GLAND PLATES WHICH ARE BOTTOM PARTS OF SWITCHGEARS AND PANELS.
   - SEALING EXTENDS ON CABLE BOXES (WHICH SHALL BE INSTALLED INSIDE CELLAR FLOOR AND JUST UNDER SWITCHGEAR OR PANEL) IN CASE THAT AREA REQUIRED TO ACCOMMODATE CABLES GLANDS HOLES ARE EXCEEDING DIMENSIONS OF THE GLAND PLATES.
3. PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE SEALED IN SUCH A WAY THAT THE ORIGINAL FIRE RATING IS RESTORED. AN APPROVED FIRE RATED MORTAR SHALL BE USED. THE SECTION OF CABLES INSIDE THE AREA TO BE SEALED SHALL BE CAREFULLY CLEANED.
4. CABLES SHALL BE IDENTIFIED WITH STAINLESS STEEL MARKERS ATTACHED TO EACH CABLE AND STAMPED WITH THE CABLE TAG AT THE FOLLOWING LOCATIONS:
   4.1 WITH MAXIMUM INTERVALS OF 30 METERS FOR ABOVEGROUND CABLES.
   4.2 WHERE CABLES CHANGES THEIR DIRECTIONS
   4.3 AT BOTH CABLE ENDS
5. ALL CABLES IN TRAYS SHALL BE GROUPED ACCORDING TO VOLTAGE, VOLTAGE CLASS AND FUNCTION AS FOLLOWING:
   5.1 HIGH VOLTAGE CABLES SHALL RUN IN SEPARATE CABLE TRAYS
   5.2 CONTROL CABLES AND LOW VOLTAGE CABLES MAY RUN IN THE SAME CABLE TRAY
   5.3 LIGHTING CABLES AND LOW VOLTAGE CABLES MAY RUN IN THE SAME CABLE TRAY.
6. MAXIMUM ALLOWABLE FILL AREA ELECTRICAL CABLES INSTALLED IN CABLE TRAYS SHALL BE 50%
7. CABLES INSTALLED ON TRAYS SHALL BE LAID NEATLY IN PARALLEL RUNS WITH NO CROSSING OVER OF CABLES, EXCEPT AS APPROVED BY CLIENT.
8. MULTI-CORE CABLES SHALL BE FIXED WITH HEAVY DUTY NYLON CABLE-TIES TO RUNGS OF CABLE TRAYS WITH MAXIMUM SPACING 1000MM FOR HORIZONTAL RUN, AND 500MM FOR VERTICAL RUN.
9. CABLE TRAYS SHALL BE INSTALLED AS A COMPLETE SYSTEM. CABLE TRAY SYSTEM SHALL NOT HAVE MECHANICALLY DISCONTINUOUS SEGMENTS OF CABLE TRAY RUNS.
10. ARMORED CABLES MAY BE EXTENDED FROM CABLE TRAYS TO EQUIPMENT
11. CABLE TRAYS RUN IN INDOOR AREAS SHALL NOT HAVE COVERS.
12. MINIMUM VERTICAL CLEARANCE BETWEEN CABLE TRAYS SHALL BE 400MM.
13. MINIMUM CROSSING DISTANCE BETWEEN CABLE TRAYS SHALL BE 150MM
14. CONSTRUCTION CONTRACTOR RESPONSIBILITY SHALL INCLUDE BUT NOT LIMITED TO THE FOLLOWING:
   14.1 CABLES CUTTING SHALL BE CARRIED OUT PREFERABLY AFTER ACCURATE POSITIONING. IN ANY OTHER CASE THE CUTTING LENGTH SHALL BE DETERMINED BY ACCURATE ROUTE MEASURE BEFORE CUTTING
   14.2 PULLING STRESSES PERMITTED DURING INSTALLATION AND OPERATION SHALL BE IN ACCORDANCE WITH THOSE ESTABLISHED BY CABLES MANUFACTURER
   14.3 ALL CABLE BENDS SHALL BE SO MADE THAT THE CABLE WILL NOT BE DAMAGED. THE MINIMUM RADIUS OF THE INSIDE OF THE BEND SHALL NOT BE LESS THAN TWELVE TIMES THE OVERALL CABLE DIAMETER AND NOT LESS THAN THAT RECOMMENDED BY THE CABLE MANUFACTURER.
   14.4 CONSTRUCTION CONTRACTOR SHALL PROVIDE MARK-UP DRAWING FOR CABLE ROUTING LAYOUTS.
   14.5 THE FOLLOWING ELECTRICAL CONSUMABLE MATERIALS SHALL BE IN CONSTRUCTION CONTRACTOR SCOPE OF SUPPLY.
      14.5.1 STAINLESS STEEL CABLE MARKERS
      14.5.2 WIRES MARKERS
      14.5.3 CABLES TIES
      14.5.4. PIN/FORK/RING TERMINALS FOR CONTROL CABLES
      14.5.5 STAINLESS STEEL BOLTS/U-BOLTS/WASHERS/NUTS
      14.5.6 HDG STEEL SUPPORTS & THREADED RODS FOR FIXATION OF CABLE TRAYS.
      14.5.7. HDG CLAMPS FOR STEEL CONDUITS
      14.5.8 CABLE CLAMPS
      14.5.9. FIRE RATED FOAM FOR SEALING SUBSTATION/BATTERY ROOM OPENINGS.
15. ALL CABLE SECTIONS NUMBERS ARE CHANGED.

IDENTIFICATION

- FOR IDENTIFICATION SEE DRAWING NO 01251-100-030-ECB-001 SHEET NO 1 OF 2

REV	DATE	DESCRIPTION	BY	CHECKED	DESIGNED	APPROVED
3	09/09/09	RE-ISSUED FOR CONSTRUCTION	P.M	S.H.A	M.R	M.A
2	09/09/09	ISSUED FOR CONSTRUCTION	A.S.M	S.H.A	A.S.M	M.A
1	09/09/09	RE-ISSUED FOR DESIGN	A.S.M	SHA/M.A	A.S.M	H.A
0	09/09/09	ISSUED FOR DESIGN	A.S.M	SHA/M.A	A.S.M	H.A

NOTICE
THIS DRAWING HAS NOT BEEN PUBLISHED. IT IS THE SOLE PROPERTY OF ENPPI. IT IS LENT TO THE RECIPIENT FOR HIS CONFIDENTIAL USE ONLY AND UPON THE CONDITIONS AND AGREEMENTS FOLLOWING IN CONSIDERATION OF THE LOAN OF THIS DRAWING. THE RECIPIENT UNDERTAKES AND AGREES TO RETURN IT UPON REQUEST AND THAT IT SHALL NOT BE REPRODUCED, COPIED, LENT OR DISCLOSED, DISPOSED OF DIRECTLY OR INDIRECTLY WITHOUT ENPPI WRITTEN CONSENT. NOR BE USED IN ANY WAY DETRIMENTAL TO THE INTERESTS OF ENPPI

EGPC
THE EGYPTIAN GENERAL PETROLEUM CO.
الهيئة العامة المصرية للبترول
EGPC

FOR : THE EGYPTIAN GENERAL PETROLEUM CORPORATION (EGPC) لاجل الهيئة العامة المصرية للبترول

AT : AGROOD التوقع : عجرود

EGPC CRUDE OIL TANK FARM AGROOD AREA (MODULE-1) SUBSTATION ELECTRICAL CABLE ROUTING LAYOUT

الشركة المصرية للخدمات البترولية والصناعية
Enppi
ENGINEERING FOR THE PETROLEUM AND PROCESS INDUSTRIES

SCALE	ENPPI DRAWING NUMBER	SHEET	REVISION
1:150	01251-100-030-ECB-001	2 OF 2	3

A1(841 0MM x 594 0MM)

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

12.06- Electrical Cables Testing Certificates

Enppi	EGPC CRUDE OIL TANK FARM	EGPC

INSPECTION AND TEST REPORT FOR

CABLE INSULATION RESISTANCE TEST

INSPECTION REPORT NUMBER	INSPECTION DATE & TIME	DOUCUMENT No.	DISPLINE	SHEET NO	SYSTEM NO.:
RFI-~~IT~~ 206		ITR-EL-0006A	ELECTRICAL		

INSTRUMENT TYPE:	SERIAL:	SERVICE VOLTAGE:	TEST VOLTAGE:	AREA / PACKAGE:
		220V, V	5kv	

NO	Item/Tag NO.	CABLE SIZE	Continuity Test	PHASE TO PHASE "M.Ohm"			PHASE TO NUETRAL"M.Ohm"			PHASES & NUETRAL TO ARMOR "M.Ohm"				RESULT	
				BR-BK	BR-GR	BK-GR	BR-B	BK-B	GR-B	BR-ARM	BK-ARM	GR-ARM	B-ARM	Pass	FAIL
1	P/1-030-SUB-PTR-1A	3x95	✓				0.1							✓	
2	P/2-030-SUB-PTR-1A	3x95	✓				0.1							✓	
3	P/3-030-SUB-PTR-1A	3x95	✓				0.1							✓	
4	G1-030-SUB-NER-1A	1x95	✓				0.1							✓	
5	P/1-030-SUB-PTR-1B	3x95	✓				0.1							✓	
6	P/2-030-SUB-PTR-1B	3x95	✓				0.1							✓	
7	P/3-030-SUB-PTR-1B	3x95	✓				0.1							✓	
8	G1-030-SUB-NER-1B	1x95	✓				0.1							✓	
9	P/1-030-SUB-HVSWG-6.6A	3x95	✓				0.1							✓	
10	P/2-030-SUB-HVSWG-6.6A	3x95	✓				0.1							✓	
11	P/3-030-SUB-HVSWG-6.6A	3x95	✓				0.1							✓	
12	P/4-030-SUB-HVSWG-6.6A	3x95	✓				0.1							✓	
13	P/1-030-SUB-HVSWG-6.6B	3x95	✓				0.1							✓	
14	P/2-030-SUB-HVSWG-6.6B	3x95	✓				0.1							✓	
15	P/3-030-SUB-HVSWG-6.6B	3x95	✓				0.1							✓	
16	P/4-030-SUB-HVSWG-6.6B	3x95	✓				0.1							✓	
17	P-030-SUB-TR-1A	3x70	✓				0.1							✓	
18	P-030-SUB-TR-1B	3x70	✓				0.1							✓	
19	P-030-EPM2-TR-1	3x70	✓				0.1							✓	

Remarks :-

Referance :-

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE	Hafiz	Islam Shehata	M. Omar
DATE			

Enppi

EGPC CRUDE OIL TANK FARM

EGPC

INSPECTION AND TEST REPORT FOR

CABLE INSULATION RESISTANCE TEST

SYSTEM NO..

INSPECTION REPORT NUMBER
PTJ-ELE-RFI- 208

INSPECTION DATE & TIME 02/06/2021

DOUCUMENT No. ITR-EL-0006A

DISPLINE ELECTRICAL

SHEET NO

INSTRUMENT TYPE:
HIGH VOLTAGE INSULATION TESTER-SANWA-MG5000

SERIAL: 17015900385

SERVICE VOLTAGE: 400

TEST VOLTAGE: 1000

AREA / PACKAGE: SUBSTATION

NO	Item/Tag NO.	CABLE SIZE	Continuity Test	PHASE TO PHASE			PHASE TO NUETRAL"M.Ohm"			PHASES & NUETRAL TO ARMOR "M.Ohm"				RESULT	
				BR-BK	BR-GR	BK-GR	BR-B	BK-B	GR-B	BR-ARM	BK-ARM	GR-ARM	B-ARM	Pass	FAIL
1	P1-030-SUB-TR-1A	3x10	✓	O.L	O.L	O.L	—	—	—	—	—	—	—	✓	
2	P1-030-SUB-TR-1B	3x10	✓	O.L	O.L	O.L	—	—	—	—	—	—	—	✓	
3	P1-030-LPDP-CR-1	3x16	✓	O.L	O.L	O.L	—	—	—	—	—	—	—	✓	
4	P1-030-LPDP-CR-2	3x16	✓	O.L	O.L	O.L	—	—	—	—	—	—	—	✓	
5	P1-030-LPDP-CR-3	3x16	✓	O.L	O.L	O.L	—	—	—	—	—	—	—	✓	
6	P1-030-SUB-NER-1A	3x4	✓	O.L	O.L	O.L	—	—	—	—	—	—	—	✓	
7	P1-030-SUB-NER-1B	3x4	✓	O.L	O.L	O.L	—	—	—	—	—	—	—	✓	
8	P1-030-SUB-PTR-1A	4x10	✓	O.L	O.L	O.L	—	—	—	—	—	—	—	✓	
9	P2-030-SUB-PTR-1A	4x10	✓	O.L	O.L	O.L	—	—	—	—	—	—	—	✓	
10	P1-030-SUB-PTR-1B	4x10	✓	O.L	O.L	O.L	—	—	—	—	—	—	—	✓	
11	P2-030-SUB-PTR-1B	4x10	✓	O.L	O.L	O.L	—	—	—	—	—	—	—	✓	
12	P1-030-SUB-HVSWG-11	4x4	✓	O.L	O.L	O.L	—	—	—	—	—	—	—		
13															
14															
15															
16															

Remarks :-

Referance :-

	PETROJET	ENPPI	PMC
NAME :	Ahmed Hassan		
SIGNATURE			
DATE	6/6/2021		

Islam Sh...

ITR-EL-0006A

Enppi PETROJET

EGPC CRUDE OIL TANK FARM

EGPC

INSPECTION AND TEST REPORT FOR

HI POT INSULATION TEST

SYSTEM NO.:

INSPECTION REPORT NUMBER	INSPECTION DATE & TIME	ITR NUMBER	DISPLINE	SHEET NO
RFI.206		ITR-EL-0008		1 OF 1

Item/Tag NO.	Refer to RFI 206				
Type :-		Core:		Size:	

NO.	Description of check	RESUNT		
		ACCEPT	REJECT	N/A.
1	No damage of cable has found and maintain insulation resistance	✓		
2	Correct cable type/size/ installed as per approved drawing	✓		
3	Calibration test certificate of testing equipment to be checked.	✓		

Continuity Test : ☑ ACCEPT ☐ REJECT ☐ N/A.

Test Equipment List

INSTRUMENT TYPE:	SERIAL:	SERVICE VOLTAGE:	TEST VOLTAGE:	

Insulation Resistance Test MΩ

PHASE TO PHASE			PHASES TO ARMOR		
BR-BK	BR-GR	BR-GR	BR-ARM	BK-ARM	GR-ARM
∞	∞	∞	∞	∞	∞

Hi-Pot test

Phase BR Test Voltage (..14.. kV)

Phase	TEST VOLTAGE	TIME	CURRENT	
ARM,BK,GR_BR		15 Min	385 μA	

Phase BK Test Voltage (..14.. kV)

Phase	TEST VOLTAGE	TIME	CURRENT	
ARM,BR,GR_BK		15 Min	405 μA	

Phase GR Test Voltage (..14.. kV)

Phase	TEST VOLTAGE	TIME	CURRENT	
ARM,BR,BK_GR		15 Min	310 μA	

Insulation Resistance Test MΩ

PHASE TO PHASE			PHASES TO ARMOR		
BR-BK	BR-GR	BR-GR	BR-ARM	BK-ARM	GR-ARM

Remarks :

INSPECTION RESULTS: ☑ APPROVEI ☐ REJECT ☐ APPROVED W/ COMMENT

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			M. omar
DATE			

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

12.07- Electrical Cables Termination Certificates

Enppi

EGPC CRUDE OIL TANK FARM

EGPC

Owner : Egyptian General Petroleum Corporation (EGPC)

Project No: 01251-100-030
:01251-100-031

Contractor CONSORTIUM (ENPPI / PETROJET)

Document No: ITR-QC-0001
Revision No. : 00

REQUEST FOR INSPECTION

ACTIVITY : CABLE TERMINATION AND TEST

NOTIFICATION NO. : PTJ-ELE-RFI- 208 DISCIPLINE : ELEC

DATE : : 02/06/2021

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
18	C1-030-PM-04B	SUBSTATION					
19	C1-030-PM-05A	SUBSTATION					
20	C1-030-PM-05B	SUBSTATION					
21	C3-030-SUB-AVR-1A	SUBSTATION					
22	C3-030-SUB-AVR-1B	SUBSTATION					
23	P1-030-SUB-TR-1A	SUBSTATION					
24	P1-030-SUB-TR-1B	SUBSTATION					
25	P1-030-LPDP-CR-1	SUBSTATION					
26	P1-030-LPDP-CR-2	SUBSTATION					
27	P1-030-LPDP-CR-3	SUBSTATION					
28	C6-030-SUB-HVSWG-6.6A	SUBSTATION					
29	C6-030-SUB-HVSWG-6.6B	SUBSTATION					
30	C2-030-SUB-LVSWG-1A	SUBSTATION					
31	C2-030-SUB-LVSWG-1B	SUBSTATION					
32	P1-030-SUB-NER-1A	SUBSTATION					
33	P1-030-SUB-NER-1B	SUBSTATION					
34	P1-030-SUB-PTR-1A	SUBSTATION					

NOTE:

Inspection result : A - Approved B - Reject C - Approved with Comment

	PETROJET	ENPPI	PMC
NAME :	Ahmed Hassan		
SIGNATURE		Islam Sherif	
DATE	6/6/2021		

Enppi

EGPC CRUDE OIL TANK FARM

EGPC

INSPECTION AND TEST REPORT FOR

CABLE TERMINATION AND SPLICING

SYSTEM NO.:

INSPECTION REPORT NUMBER	INSPECTION DATE & TIME	ITR NUMBER	DISPLINE	SHEET NO
PTJ-ELE-RFI- 208	02/06/2021	ITR-EL-0009	ELEC	1 OF 1

Item/Tag NO.	For All Cables tages in PTJ-ELE-RFI- 208				
Type :-		Core:		Size:	

NO.	Description of check	RESUNT		
		ACCEPT	REJECT	N/A.
1	Check cable glands are correct type and size as per cable schedule.	✓		
2	Check there are no damages to cores, termination chamber layout is satisfactory, core identification is correct, crimped and pins satisfactory.	✓		
3	Check cable tag is done correctly.	✓		
4	Test and confirm conductor, phase continuity.	✓		
5	Check insulation resistance test (megger) is completed *'	✓		
6	Check Hi-pot test is completed, only for MV/HV cables *''	✗		✓
7	Connect all cores at both ends and confirm all connections are correct as per termination diagram.	✓		
8	Confirm spare cores, screens are earthed and conform to design drawings/specifications	✓		
9	Check enclosure cover is installed , no damages and no bolts are missing	✓		
10	Calibration test certificate of testing equipment to be checked.			✓

Remarks :

*' : ITR-EL-006A/B

*'' :ITR-EL-008

	PETROJET	ENPPI	PMC
NAME	Ahmed Hassan		
SIGNATURE			
DATE	6/6/2021		

® Islam Sherif

Enppi	EGPC CRUDE OIL TANK FARM	EGPC

Owner :	Egyptian General Petroleum Corporation (EGPC)	Project No: 01251-100-030 :01251-100-031
Contractor	CONSORTIUM (ENPPI / PETROJET)	Document No: ITR-QC-0001 Revision No. : 00

REQUEST FOR INSPECTION

ACTIVITY : CABLE TERMINATION AND SPLICING

NOTIFICATION NO. : PTJ-INS-RFI- 206 DISCIPLINE : E&I

DATE : : 5/24/2021

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
	CABLE TERMINATIN AND SPLICING	MODULE 1	24-May-21				
1	P/1-030-SUB-PTR-1A						
2	P/2-030-SUB-PTR-1A						
3	P/3-030-SUB-PTR-1A						
4	G1-030-SUB-NER-1A						
5	P/1-030-SUB-PTR-1B						
6	P/2-030-SUB-PTR-1B						
7	P/3-030-SUB-PTR-1B						
8	G1-030-SUB-NER-1B						
9	P/1-030-SUB-HVSWG-6.6A						
10	P/2-030-SUB-HVSWG-6.6A						
11	P/3-030-SUB-HVSWG-6.6A						
12	P/4-030-SUB-HVSWG-6.6A						
13	P/1-030-SUB-HVSWG-6.6B						
14	P/2-030-SUB-HVSWG-6.6B						
15	P/3-030-SUB-HVSWG-6.6B						
16	P/4-030-SUB-HVSWG-6.6B						
17	P-030-SUB-TR-1A						
18	P-030-SUB-TR-1B						
19	P-030-EPM2-TR-1						

NOTE:

Inspection result : A - Approved B - Reject C - Approved with Comment

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			M. Omar
DATE			

Enppi PETROJET

EGPC CRUDE OIL TANK FARM

EGPC

INSPECTION AND TEST REPORT FOR

CABLE TERMINATION AND SPLICING

INSPECTION REPORT NUMBER	INSPECTION DATE & TIME	ITR NUMBER	DISPLINE	SHEET NO
RFI-206		ITR-EL-0009	ELEC	1 OF 1

SYSTEM NO.:

Item/Tag NO.	For all cables in RFI 206				
Type :-		Core:		Size:	

NO.	Description of check	RESUNT		
		ACCEPT	REJECT	N/A.
1	Check cable glands are correct type and size as per cable schedule.	✓		
2	Check there are no damages to cores, termination chamber layout is satisfactory, core identification is correct, crimped and pins satisfactory.	✓		
3	Check cable tag is done correctly.	✓		
4	Test and confirm conductor, phase continuity.	✓		
5	Check insulation resistance test (megger) is completed *'	✓		
6	Check Hi-pot test is completed, only for MV/HV cables *''	✓		
7	Connect all cores at both ends and confirm all connections are correct as per termination diagram.	✓		
8	Confirm spare cores, screens are earthed and conform to design drawings/specifications			✓
9	Check enclosure cover is installed , no damages and no bolts are missing	✓		
10	Calibration test certificate of testing equipment to be checked.	✓		

Remarks :

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			M. Omar
DATE			

Enppi	EGPC CRUDE OIL TANK FARM AGROOD AREA (MODULE 1 & 2)	EGPC

Owner : Egyptian General Petroleum Corporation (EGPC)

Project No: 01251-100-030 :01251-100-031

Contractor CONSORTIUM (ENPPI / PETROJET)

Document No: ITR-QC-0001
Revision No. : 00

REQUEST FOR INSPECTION

ACTIVITY : BUS DUCT INSTALLATION

NOTIFICATION NO. : PTJ-ELE-RFI-150 DISCIPLINE : E&I

DATE : : 3/14/2021

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
	BUS DUCT INSTALLATION	AGROOD MODULE 01	14-Mar-21				
	SUB -LVBD-1A						
	SUB -LVBD-1B						

NOTE:

Inspection result : A - Approved B - Reject C - Approved with Comment

- check the min clearance between the busduct and the edge of the wall.
- Supplier final inspection & torque checklist by Supplier to be attached (Done) Sab (Done) Sab

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			M. omar
DATE			23.3.2021

Enppi	EGPC CRUDE OIL TANK FARM	EGPC

INSPECTION AND TEST REPORT FOR

BUS DUCT INSTALLATION

INSPECTION REPORT NUMBER	INSPECTION DATE & TIME	DOUCUMENT No.	DISPLINE	SHEET NO
RF7 - 15c		ITR-EL-0015	ELECTRICAL	

Busway type		AREA DESCRIPTION	
Tag No.		Rated Voltage	

NO.	INSPECTION	RESULT		
		ACCEPT	REJECT	N/A.
1	Check that the min clearances between the Busway sections and the edge of the wall not less than 100 mm	✓		
2	Check that the Min clearance distance between the top of the Busway and ceiling not less than 1000 m at tap-off	✓		
3	Check that the Min mounting clearances between the two parallel Busway Edge wise / Flat wise not less than (if applicable)	✓		
4	Check that the min distance between each two supports is not less than the recommended value on installation manual.	✓		
5	Check that the min distance between the joint blocks axis and below floor slab for the risers is in accordance to recommended value in installation manual	✓		
6	Check that the min distance between the joint block axis and the corresponding upper ceiling for the risers is in accordance to recommended value in installation manual.	✓		
7	Check that min clearance for the Busway trucking through the opening of the floor or through the wall is not less than 50mm.	✓		
8	Check that there is no any Joint block is positioned in the floor slab/wall	✓		
9	Check that Busways components are free from physical damage	✓		
10	Check that the Busways during the installations are not exposed to any bad conditions (Dust, Vapors or abnormal vibrations)	✓		
11	Verify that the size of the steel threaded drop rod is not less than mentioned value in installation manual	✓		
12	Check that the used supports are suitable to installation type and verify proper fixation of supports	✓		
13	Verify that the used fixing system for risers is suitable to rated currents of the risers as per installation manual recommendations.	✓		
14	Verify that supporting of the Busway is independently from supports for other building system such as (fall ceiling- piping – duct work)	✓		
15	Verify that the vertical busway is protected from moisture or dust from unfinished roof.	✓		

REMARKS:

	PETROJET	ENPPI	PMC
NAME		Rasw	
SIGNATURE			M. omar
DATE			23-3-2021

Enppi

EGPC CRUDE OIL TANK FARM

EGPC

Owner :	Egyptian General Petroleum Corporation (EGPC)	Project No: 01251-100-030 :01251-100-031
Contractor	CONSORTIUM (ENPPI / PETROJET)	Document No: ITR-QC-0001 Revision No. : 00

REQUEST FOR INSPECTION

ACTIVITY : PTJ-ELE-RFI-164

NOTIFICATION NO. :

DISCIPLINE : ELECTRICAL

DATE : : 4/5/2021

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
	DRY TRANSFORMER INSTALLATION		5-Apr-21				
1	030-SUB-TR-1A						
2	030-SUB-TR-1B						

NOTE:

Inspection result : A - Approved B - Reject C - Approved with Comment

	PETROJET	ENPPI	PMC
NAME			
SIGNATURE			
DATE			

Enppi

EGPC CRUDE OIL TANK FARM

EGPC

INSPECTION AND TEST REPORT FOR

POWER TRANSFORMER INSTALLATION

INSPECTION REPORT NUMBER	INSPECTION DATE & TIME	ITR NUMBER	DISPLINE	SHEET NO
RFI-164		ITR-EL-0017	ELECTRICAL	

JOB DESCRIPTION	AREA DESCRIPTION

Transformer No.		Serial No.	
System Voltage		Rating	

NO.	INSPECTION	RESULT		
		ACCEPT	REJECT	N/A.
1	The transformer room must be dry and clean, the flowing of the water must be prevented			N/A
2	Adequate ventilation is to be provided for heat dissipation			N/A
3	For indoor installation care must be taken to place transformers at a distance from the wall in keeping with insulation level mentioned in the rating plate as well as the requirements stipulated in standards	✓		
4	The spacing of the HV cables should be according to standards	✓		~~N/A~~
5	If the LV/HV terminal is aluminum, The necessary precautions will be taken for the copper cable or copper bus bar connection			N/A
6	The connection cables for transformer auxiliary shall be fixed rigidly to cable channels adequately Isolated from active parts as per the requirements of standards			N/A
7	Check all the screws on HV coils and on LV connections, if necessary tighten according to the installation manual			N/A

REMARKS:

REFERENCE DOCUMENTS:

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

12.08- FAT Reports & Certificates

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

12.09- SAT Reports & Certificates

oGL-004

Electric	Dry type transformers testing and commissioning checklist	Ref: TR-CK-01 Rev: 26/10/2020

Date	15/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-TR-1A
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455389
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.98	Total mass kG	3505	Energization date	

1. Pre-installation inspection

#	Description	Result	Remark
1.1	If any transportation damages are found, it shall be reported to the Transportation Company	OK	
1.2	The transformer shall be lifted and carried by the lifting lugs	OK	
1.3	During loading and/or unloading of the transformer by crane, swaying movements should be avoided. As knocks against walls or other objects may cause damage to the HV-windings or may cause damage to spacers.	OK	
1.4	The rollers shall be fitted	OK	
1.5	The transformer shall be pulled from the pulling eyes on the lower frame. It shall not be moved by pushing on to the coils in any case	OK	
1.6	The off-loading has to be done carefully	OK	
1.7	Dust which accumulates on transformer during transport or storage should be cleaned by using compressed air	NOT OK	The room and transformer must be clean
1.8	The storehouse shall be a covered place, which shall not be cooler than -25°C. Transformers in storage must be protected from the direct sunlight and condensation water	OK	
1.9	Check Direction of Air Flow According to Drawing	N/A	
1.10	Check for Forced Ventilation (Fans controlled by Thermostat system)	N/A	

Comments:

Client (PPC): Mohamed Ibrahim For. M. omar

Customer (Enppi): Ahmed Nadeem A. Nadeem

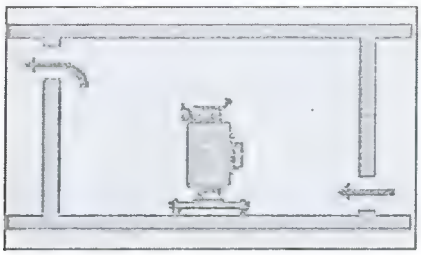
Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Internal

Date	15/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-TR-1A
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455389
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.98	Total mass kG	3505	Energization date	

#	Description	Result	Remark
1.11	Check for Forced Ventilation (Fans Only)	N/A	
1.12	Check for Natural Ventilation (Door Openings, Ventilation Openings) as per below fig.	N/A	



2. Installation inspection

#	Description	Result	Remark
1.1	The transformer room must be dry and clean, the flowing of the water must be prevented	OK	
1.2	Adequate ventilation is to be provided for heat dissipation	NOT OK	The fan of room has not install yet
1.3	For indoor installation care must be taken to place transformers at a distance from the wall in keeping with insulation level mentioned in the rating plate as well as the requirements stipulated in standards	OK	
1.4	The spacing of the HV cables should be according to standards	OK	

Comments:

Client (PPC): Mohamed Ibrahim For. M.omar

Customer (Enppi): Ahmed Nadeem A. Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Date	15/6/2021	Order Number	E09-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-TR-1A
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455389
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.98	Total mass kG	3505	Energization date	

#	Description	Result	Remark
1.5	If the LV/HV terminal is aluminum, The necessary precautions will be taken for the copper cable or copper bus bar connection	N/A	
1.6	The connection cables for transformer auxiliary shall be fixed rigidly to cable channels adequately Isolated from active parts as per the requirements of standards	OK	
1.7	Check all the screws on HV coils and on LV connections, if necessary tighten according to the installation manual	OK	

3. Pre-commissioning inspection

#	Description	Result	Remark
1.1	Verify that equipment name plates are according to the corresponding drawings.	OK	
1.2	Make a close examination for shipping brackets or fixtures that may not have been removed during installation.	OK	
1.3	Verify appropriate anchorage, fixation, required area clearances, physical damage, and cleanliness.	OK	
1.4	Inspect the physical and mechanical condition of the equipment for any visual damage specially at bushing areas.	OK	
1.5	Verify that the installation ground is correctly leveled.	OK	
1.6	Verify the tightness of accessible bolted electrical connections using the calibrated torque-wrench method.	OK	
1.7	Verify that fixed tap connections are as per the drawings.	OK	
1.8	Check CT's ratings and polarity (Visual). (if available)	OK	

Comments:

Client (PPC): Mohamed Ibrahim For. M. omar

Customer (Enppi): Ahmed Nadeem A. Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Internal

Date	15/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-TR-1A
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455389
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.98	Total mass kG	3505	Energization date	

#	Description	Result	Remark
1.9	Verify connection of all alarm, control, and trip circuits for temperature, pressure relief device, pressure fault relay and any other if found.	OK	
1.10	Verify that the control and alarm settings for temperature indicators are as specified.	OK	
1.11	Verify that customer connections to remote power, operators, interlocks, and indicators have been made.	OK	

4. Commissioning checks

#	Description	Result	Remark
2.1	Availability of the required auxiliary supply for control operation.	OK	
2.2	Cooling system operate correctly and check temperature module settings (If found).	N/A	

2.3 Insulation resistance test for the winding

#	Connection	Test Voltage in DC Volts	Resistance in GΩ		DAR Value 60Sec/30Sec	Remarks
			30 Sec	60 Sec		
1	HV-(LV+E)	5000	509 GΩ	1.056 TΩ	2.07	
2	HV-LV	2500	290.70GΩ	1.024 TΩ	3.52	
3	LV-(HV+E)	1000	121 GΩ	167.7 GΩ	1.38	

Comments:

Client (PPC): Mohamed Ibrahim for. M. omar

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Internal

Date	15/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-TR-1A
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455389
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.98	Total mass kG	3505	Energization date	

2.4 Voltage ratio test

Tap Position	HV Applied volts (V)			LV Measured volts (V)			Measured Ratio	Error
	RY	YB	BR	ry	yb	br		
1	402.5	402.5	402.2	23.22	23.20	23.21	17.3374	-0.071310756
2	402.5	402.6	402.2	23.77	23.75	23.75	16.9398	-0.161456734
3	402.5	402.5	402.2	24.35	24.33	24.33	16.5347	-0.210431946
4	402.6	402.5	402.2	25.02	25	25	16.093	-0.034448208
5	402.5	402.6	402.3	25.66	25.65	25.64	15.6907	-0.100212135

- Applied voltage connected only on primary windings
- Applied voltage should be stable
- Real ratio = $\frac{\text{Rated Voltage Primary}}{\text{Rated Voltage Secondary}}$
- Measured ratio =$(\frac{RY+YB+BR)}{3} / \frac{ry+yb+br}{3})$
- Error = $\frac{\text{Real Ratio}-\text{Measured Ratio}}{\text{Real Ration}} \times 100$
- Test is enough on only one tap position

2.5 Phase Rotation Check

Secondary voltage	Phase1	Phase2	Phase3

Secondary voltage	L 1-2	L 2-3	L 3-1

N.B: Secondary Line Voltage must not be greater than 415 VA

Comments:

Client (PPC): Mohamed Ibrahim For. M. omar

Customer (Enppi): Ahmed Nadeem A. nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Date	15/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-TR-1A
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455389
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.98	Total mass kG	3505	Energization date	

5. Pre-energization checks

#	Description	Result	Remark
3.1	Check that transformer is clean and safe to energize.		
3.2	Check that Barriers, covers and shutters are installed in its place (if found).		
3.3	Verify correct equipment connection to earth link.		
3.4	Neutral connection to earth link.		
3.5	Check the primary and secondary connection status.		

Comments:

Client (PPC): Mohamed Ibrahim For. M. omar

Customer (Enppi): Ahmed Nadeem A. Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

	Dry type transformers testing and commissioning checklist	Ref: TR-CK-01 Rev: 26/10/2020

Date	15/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-TR-1B
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455390
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.85	Total mass kG	3505	Energization date	

1. Pre-installation inspection

#	Description	Result	Remark
1.1	If any transportation damages are found, it shall be reported to the Transportation Company	OK	
1.2	The transformer shall be lifted and carried by the lifting lugs	OK	
1.3	During loading and/or unloading of the transformer by crane, swaying movements should be avoided. As knocks against walls or other objects may cause damage to the HV-windings or may cause damage to spacers.	OK	
1.4	The rollers shall be fitted	OK	
1.5	The transformer shall be pulled from the pulling eyes on the lower frame. It shall not be moved by pushing on to the coils in any case	OK	
1.6	The off-loading has to be done carefully	OK	
1.7	Dust which accumulates on transformer during transport or storage should be cleaned by using compressed air	NOT OK	The room and transformer must be clean
1.8	The storehouse shall be a covered place, which shall not be cooler than -25°C. Transformers in storage must be protected from the direct sunlight and condensation water	OK	
1.9	Check Direction of Air Flow According to Drawing	N/A	
1.10	Check for Forced Ventilation (Fans controlled by Thermostat system)	N/A	

Comments:

Client (PPC): Mohamed Ibrahim For. M.omar

Customer (Enppi): Ahmed Nadeem

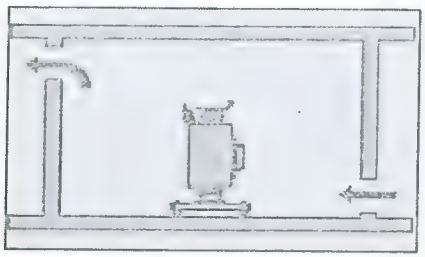
Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Internal

Date	15/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-TR-1B
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455390
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.85	Total mass kG	3505	Energization date	

#	Description	Result	Remark
1.11	Check for Forced Ventilation (Fans Only)	N/A	
1.12	Check for Natural Ventilation (Door Openings, Ventilation Openings) as per below fig.	N/A	



2. Installation inspection

#	Description	Result	Remark
1.1	The transformer room must be dry and clean, the flowing of the water must be prevented	OK	
1.2	Adequate ventilation is to be provided for heat dissipation	NOT OK	The fan of room has not install yet
1.3	For indoor installation care must be taken to place transformers at a distance from the wall in keeping with insulation level mentioned in the rating plate as well as the requirements stipulated in standards	OK	
1.4	The spacing of the HV cables should be according to standards	OK	

Comments:

Client (PPC): Mohamed Ibrahim For. M.omar

Customer (Enppi): Ahmed Nadeem A.nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Date	15/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-TR-1B
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455390
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.85	Total mass kG	3505	Energization date	

#	Description	Result	Remark
1.5	If the LV/HV terminal is aluminum, The necessary precautions will be taken for the copper cable or copper bus bar connection	N/A	
1.6	The connection cables for transformer auxiliary shall be fixed rigidly to cable channels adequately Isolated from active parts as per the requirements of standards	OK	
1.7	Check all the screws on HV coils and on LV connections, if necessary tighten according to the installation manual	OK	

3. Pre-commissioning inspection

#	Description	Result	Remark
1.1	Verify that equipment name plates are according to the corresponding drawings.	OK	
1.2	Make a close examination for shipping brackets or fixtures that may not have been removed during installation.	OK	
1.3	Verify appropriate anchorage, fixation, required area clearances, physical damage, and cleanliness.	OK	
1.4	Inspect the physical and mechanical condition of the equipment for any visual damage specially at bushing areas.	OK	
1.5	Verify that the installation ground is correctly leveled.	OK	
1.6	Verify the tightness of accessible bolted electrical connections using the calibrated torque-wrench method.	OK	
1.7	Verify that fixed tap connections are as per the drawings.	OK	
1.8	Check CT's ratings and polarity (Visual). (if available)	OK	

Comments:

Client (PPC): Mohamed Ibrahim For. Homar

Customer (Enppi): Ahmed Nadeem A. Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Internal

Date	15/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-TR-1B
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455390
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.85	Total mass kG	3505	Energization date	

#	Description	Result	Remark
1.9	Verify connection of all alarm, control, and trip circuits for temperature, pressure relief device, pressure fault relay and any other if found.	OK	
1.10	Verify that the control and alarm settings for temperature indicators are as specified.	OK	
1.11	Verify that customer connections to remote power, operators, interlocks, and indicators have been made.	OK	

4. Commissioning checks

#	Description	Result	Remark
2.1	Availability of the required auxiliary supply for control operation.	OK	
2.2	Cooling system operate correctly and check temperature module settings (If found).	N/A	

2.3 Insulation resistance test for the winding

#	Connection	Test Voltage in DC Volts	Resistance in GΩ		DAR Value 60Sec/15Sec	Remarks
			15 Sec	60 Sec		
1	HV-(LV+E)	5000	223 GΩ	779 GΩ	3.49	
2	HV-LV	2500	1.441 TΩ	2.221 TΩ	1.54	
3	LV-(HV+E)	1000	106.5 GΩ	159.2 GΩ	1.49	

Comments:

Client (PPC): Mohamed Ibrahim For M. Omar

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Internal

Date	15/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-TR-1B
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455390
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.85	Total mass kG	3505	Energization date	

2.4 Voltage ratio test

Tap Position	HV Applied volts (V)			LV Measured volts (V)			Measured Ratio	Error
	RY	YB	BR	ry	yb	br		
1	402.3	402.7	402	23.22	23.21	23.19	17.337	-0.069103229
2	402.2	402.7	402	23.8	23.79	23.73	16.9223	-0.05807497
3	402.2	402.7	402	24.38	24.37	24.31	16.5193	-0.116964886
4	402.3	402.7	402.1	25.02	25.01	24.98	16.0925	-0.03121055
5	402.3	402.7	402.1	25.66	25.64	25.62	15.6929	-0.114371401

- Applied voltage connected only on primary windings
- Applied voltage should be stable
- Real ratio = $\frac{\text{Rated Voltage Primary}}{\text{Rated Voltage Secondary}}$
- Measured ratio =$(\frac{RY+YB+BR)}{3} / \frac{ry+yb+br}{3})$
- Error = $\frac{\text{Real Ratio} - \text{Measured Ratio}}{\text{Real Ration}} \times 100$
- Test is enough on only one tap position

2.5 Phase Rotation Check

Secondary voltage	**Phase1**	**Phase2**	**Phase3**
Secondary voltage	**L 1-2**	**L 2-3**	**L 3-1**

N.B: Secondary Line Voltage must not be greater than 415 VA

Comments:

Client (PPC): Mohamed Ibrahim For. M. omar

Customer (Enppi): Ahmed Nadeem A. abdel

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Internal

Date	15/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	**Agrood 1 (Area 030)**	Equip. Tag	030-SUB-TR-1B
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455390
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.85	Total mass kG	3505	Energization date	

5. Pre-energization checks

#	Description	Result	Remark
3.1	Check that transformer is clean and safe to energize.		
3.2	Check that Barriers, covers and shutters are installed in its place (if found).		
3.3	Verify correct equipment connection to earth link.		
3.4	Neutral connection to earth link.		
3.5	Check the primary and secondary connection status.		

Comments:

Client (PPC): Mohamed Ibrahim For M. omar

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend

"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Internal

	Dry type transformers testing and commissioning checklist	Ref: TR-CK-01 Rev: 26/10/2020

Date	15/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB TR-1A
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455389
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.98	Total mass kG	3505	Energization date	

1. Pre-installation inspection

#	Description	Result	Remark
1.1	If any transportation damages are found, it shall be reported to the Transportation Company	OK	
1.2	The transformer shall be lifted and carried by the lifting lugs	OK	
1.3	During loading and/or unloading of the transformer by crane, swaying movements should be avoided. As knocks against walls or other objects may cause damage to the HV-windings or may cause damage to spacers.	OK	
1.4	The rollers shall be fitted	OK	
1.5	The transformer shall be pulled from the pulling eyes on the lower frame. It shall not be moved by pushing on to the coils in any case	OK	
1.6	The off-loading has to be done carefully	OK	
1.7	Dust which accumulates on transformer during transport or storage should be cleaned by using compressed air	NOT OK	The room and transformer must be clean
1.8	The storehouse shall be a covered place, which shall not be cooler than -25°C. Transformers in storage must be protected from the direct sunlight and condensation water	OK	
1.9	Check Direction of Air Flow According to Drawing	N/A	
1.10	Check for Forced Ventilation (Fans controlled by Thermostat system)	N/A	

Comments:

Client (PPC): Mohamed Ibrahim For. M. omar

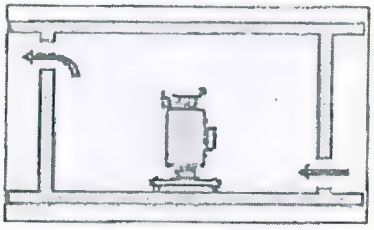
Customer (Enppi): Ahmed Nadeem A. Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Date	15/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-TR-1A
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455380
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.98	Total mass kG	3505	Energization date	

#	Description	Result	Remark
1.11	Check for Forced Ventilation (Fans Only)	N/A	
1.12	Check for Natural Ventilation (Door Openings, Ventilation Openings) as per below fig.	N/A	



2. Installation inspection

#	Description	Result	Remark
1.1	The transformer room must be dry and clean, the flowing of the water must be prevented	OK	
1.2	Adequate ventilation is to be provided for heat dissipation	NOT OK	The fan of room has not install yet
1.3	For indoor installation care must be taken to place transformers at a distance from the wall in keeping with insulation level mentioned in the rating plate as well as the requirements stipulated in standards	OK	
1.4	The spacing of the HV cables should be according to standards	OK	

Comments:

Client (PPC): Mohamed Ibrahim For. M. Omar

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Date	15/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-TR-1B
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455390
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.85	Total mass kG	3505	Energization date	

2.4 Voltage ratio test

Tap Position	HV Applied volts (V)			LV Measured volts (V)			Measured Ratio	Error
	RY	YB	BR	ry	yb	br		
1	402.3	402.7	402	23.22	23.21	23.19	17.337	-0.069103229
2	402.2	402.7	402	23.8	23.79	23.73	16.9223	-0.05807497
3	402.2	402.7	402	24.38	24.37	24.31	16.5193	-0.116964886
4	402.3	402.7	402.1	25.02	25.01	24.98	16.0925	-0.03121055
5	402.3	402.7	402.1	25.66	25.64	25.62	15.6929	-0.114371401

- Applied voltage connected only on primary windings
- Applied voltage should be stable
- Real ratio = $\frac{\text{Rated Voltage Primary}}{\text{Rated Voltage Secondary}}$
- Measured ratio $=\left(\frac{RY+YB+BR}{3} / \frac{ry+yb+br}{3}\right)$
- Error = $\frac{\text{Real Ratio} - \text{Measured Ratio}}{\text{Real Ration}} \times 100$
- Test is enough on only one tap position

2.5 Phase Rotation Check

Secondary voltage	**Phase1**	**Phase2**	**Phase3**
Secondary voltage	**L 1-2**	**L 2-3**	**L 3-1**

N.B: Secondary Line Voltage must not be greater than 415 VA

Comments:

Client (PPC): Mohamed Ibrahim For. M. Omar

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Date	15/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-TR-1A
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455389
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.98	Total mass kG	3505	Energization date	

#	Description	Result	Remark
1.5	If the LV/HV terminal is aluminum, The necessary precautions will be taken for the copper cable or copper bus bar connection	N/A	
1.6	The connection cables for transformer auxiliary shall be fixed rigidly to cable channels adequately Isolated from active parts as per the requirements of standards	OK	
1.7	Check all the screws on HV coils and on LV connections, if necessary tighten according to the installation manual	OK	

3. Pre-commissioning inspection

#	Description	Result	Remark
1.1	Verify that equipment name plates are according to the corresponding drawings.	OK	
1.2	Make a close examination for shipping brackets or fixtures that may not have been removed during installation.	OK	
1.3	Verify appropriate anchorage, fixation, required area clearances, physical damage, and cleanliness.	OK	
1.4	Inspect the physical and mechanical condition of the equipment for any visual damage specially at bushing areas.	OK	
1.5	Verify that the installation ground is correctly leveled.	OK	
1.6	Verify the tightness of accessible bolted electrical connections using the calibrated torque-wrench method.	OK	
1.7	Verify that fixed tap connections are as per the drawings.	OK	
1.8	Check CT's ratings and polarity (Visual). (if available)	OK	

Comments:

Client (PPC): Mohamed Ibrahim For. M. omar

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Date	15/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030 SUB TR-1A
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455389
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.98	Total mass kG	3505	Energization date	

#	Description	Result	Remark
1.9	Verify connection of all alarm, control, and trip circuits for temperature, pressure relief device, pressure fault relay and any other if found.	OK	
1.10	Verify that the control and alarm settings for temperature indicators are as specified.	OK	
1.11	Verify that customer connections to remote power, operators, interlocks, and indicators have been made.	OK	

4. Commissioning checks

#	Description	Result	Remark
2.1	Availability of the required auxiliary supply for control operation.	OK	
2.2	Cooling system operate correctly and check temperature module settings (If found).	N/A	

2.3 Insulation resistance test for the winding

#	Connection	Test Voltage in DC Volts	Resistance in GΩ		DAR Value 60Sec/30Sec	Remarks
			30 Sec	60 Sec		
1	HV-(LV+E)	5000	509 GΩ	1.056 TΩ	2.07	
2	HV-LV	2500	290.70GΩ	1.024 TΩ	3.52	
3	LV-(HV+E)	1000	121 GΩ	167.7 GΩ	1.38	

Comments:

Client (PPC): Mohamed Ibrahim for. M. omar

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Date	15/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-TR-1A
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial//	1455389
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.98	Total mass kG	3505	Energization date	

2.4 Voltage ratio test

Tap Position	HV Applied volts (V)			LV Measured volts (V)			Measured Ratio	Error
	RY	YB	BR	ry	yb	br		
1	402.5	402.5	402.2	23.22	23.20	23.21	17.3374	-0.071310756
2	402.5	402.6	402.2	23.77	23.75	23.75	16.9398	-0.161456734
3	402.5	402.5	402.2	24.35	24.33	24.33	16.5347	-0.210431946
4	402.6	402.5	402.2	25.02	25	25	16.093	-0.034448208
5	402.5	402.6	402.3	25.66	25.65	25.64	15.6907	-0.100212135

- Applied voltage connected only on primary windings
- Applied voltage should be stable
- Real ratio = $\frac{\text{Rated Voltage Primary}}{\text{Rated Voltage Secondary}}$
- Measured ratio = $(\frac{RY+YB+BR)}{3} / \frac{ry+yb+br}{3})$
- Error = $\frac{\text{Real Ratio} - \text{Measured Ratio}}{\text{Real Ration}} \times 100$
- Test is enough on only one tap position

2.5 Phase Rotation Check

	Phase1	Phase2	Phase3
Secondary voltage			

	L 1-2	L 2-3	L 3-1
Secondary voltage			

N.B: Secondary Line Voltage must not be greater than 415 VA

Comments:

Client (PPC): Mohamed Ibrahim For. M. omar

Customer (Enppi): Ahmed Nadeem A. nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Date	15/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-TR-1A
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455389
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.98	Total mass kG	3505	Energization date	

5. **Pre-energization checks**

#	Description	Result	Remark
3.1	Check that transformer is clean and safe to energize.		
3.2	Check that Barriers, covers and shutters are installed in its place (if found).		
3.3	Verify correct equipment connection to earth link.		
3.4	Neutral connection to earth link.		
3.5	Check the primary and secondary connection status.		

Comments:

Client (PPC): Mohamed Ibrahim For. M.omar

Customer (Enppi): Ahmed Nadeem A.Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Schneider Electric	Dry type transformers testing and commissioning checklist	Ref: TR-CK-01 Rev: 26/10/2020

Date	15/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-TR-1B
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455390
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.85	Total mass kG	3505	Energization date	

1. Pre-installation inspection

#	Description	Result	Remark
1.1	If any transportation damages are found, it shall be reported to the Transportation Company	OK	
1.2	The transformer shall be lifted and carried by the lifting lugs	OK	
1.3	During loading and/or unloading of the transformer by crane, swaying movements should be avoided. As knocks against walls or other objects may cause damage to the HV-windings or may cause damage to spacers.	OK	
1.4	The rollers shall be fitted	OK	
1.5	The transformer shall be pulled from the pulling eyes on the lower frame. It shall not be moved by pushing on to the coils in any case	OK	
1.6	The off-loading has to be done carefully	OK	
1.7	Dust which accumulates on transformer during transport or storage should be cleaned by using compressed air	NOT OK	The room and transformer must be clean
1.8	The storehouse shall be a covered place, which shall not be cooler than -25°C. Transformers in storage must be protected from the direct sunlight and condensation water	OK	
1.9	Check Direction of Air Flow According to Drawing	N/A	
1.10	Check for Forced Ventilation (Fans controlled by Thermostat system)	N/A	

Comments:

Client (PPC): Mohamed Ibrahim for. H'omar

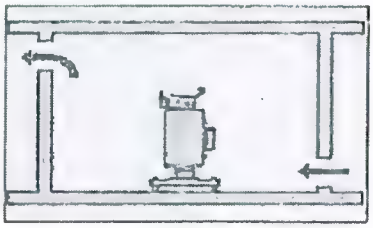
Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Date	15/6/2021	Order Number	E9[illegible]001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-TR-1B
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455390
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.85	Total mass kG	3505	Energization date	

#	Description	Result	Remark
1.11	Check for Forced Ventilation (Fans Only)	N/A	
1.12	Check for Natural Ventilation (Door Openings, Ventilation Openings) as per below fig.	N/A	



2. Installation inspection

#	Description	Result	Remark
1.1	The transformer room must be dry and clean, the flowing of the water must be prevented	OK	
1.2	Adequate ventilation is to be provided for heat dissipation	NOT OK	The fan of room has not install yet
1.3	For indoor installation care must be taken to place transformers at a distance from the wall in keeping with insulation level mentioned in the rating plate as well as the requirements stipulated in standards	OK	
1.4	The spacing of the HV cables should be according to standards	OK	

Comments:

Client (PPC): Mohamed Ibrahim For. M. Omar

Customer (Enppi): Ahmed Nadeem A. Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Date	15/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-TR-1B
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455390
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.85	Total mass kG	3505	Energization date	

#	Description	Result	Remark
1.5	If the LV/HV terminal is aluminum, The necessary precautions will be taken for the copper cable or copper bus bar connection	N/A	
1.6	The connection cables for transformer auxiliary shall be fixed rigidly to cable channels adequately Isolated from active parts as per the requirements of standards	OK	
1.7	Check all the screws on HV coils and on LV connections, if necessary tighten according to the installation manual	OK	

3. Pre-commissioning inspection

#	Description	Result	Remark
1.1	Verify that equipment name plates are according to the corresponding drawings.	OK	
1.2	Make a close examination for shipping brackets or fixtures that may not have been removed during installation.	OK	
1.3	Verify appropriate anchorage, fixation, required area clearances, physical damage, and cleanliness.	OK	
1.4	Inspect the physical and mechanical condition of the equipment for any visual damage specially at bushing areas.	OK	
1.5	Verify that the installation ground is correctly leveled.	OK	
1.6	Verify the tightness of accessible bolted electrical connections using the calibrated torque-wrench method.	OK	
1.7	Verify that fixed tap connections are as per the drawings.	OK	
1.8	Check CT's ratings and polarity (Visual). (if available)	OK	

Comments:

Client (PPC): Mohamed Ibrahim For. Hamed

Customer (Enppi): Ahmed Nadeem A. Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Date	15/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030 SUB TR-1B
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455390
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.85	Total mass kG	3505	Energization date	

#	Description	Result	Remark
1.9	Verify connection of all alarm, control, and trip circuits for temperature, pressure relief device, pressure fault relay and any other if found.	OK	
1.10	Verify that the control and alarm settings for temperature indicators are as specified.	OK	
1.11	Verify that customer connections to remote power, operators, interlocks, and indicators have been made.	OK	

4. Commissioning checks

#	Description	Result	Remark
2.1	Availability of the required auxiliary supply for control operation.	OK	
2.2	Cooling system operate correctly and check temperature module settings (If found).	N/A	

2.3 Insulation resistance test for the winding

#	Connection	Test Voltage in DC Volts	Resistance in GΩ		DAR Value 60Sec/15Sec	Remarks
			15 Sec	60 Sec		
1	HV-(LV+E)	5000	223 GΩ	779 GΩ	3.49	
2	HV-LV	2500	1.441 TΩ	2.221 TΩ	1.54	
3	LV-(HV+E)	1000	106.5 GΩ	159.2 GΩ	1.49	

Comments:

Client (PPC): Mohamed Ibrahim

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Date	15/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	**Agrood 1 (Area 030)**	Equip. Tag	030-SUB-TR-1B
Rated Power kVA	1000KVA	Service Voltage	400	TR Serial#	1455390
Rated HV @ no-load	6600	Rated LV @ no-load	400	Phases	3
Rated current - HV	87.5	Rated current - LV	1443.4	Frequency (Hz)	50
Cooling type	AN	Manufacturing year	2020	Vector group	DYN11
Impedance Voltage %	4.85	Total mass kG	3505	Energization date	

5. Pre-energization checks

#	Description	Result	Remark
3.1	Check that transformer is clean and safe to energize.		
3.2	Check that Barriers, covers and shutters are installed in its place (if found).		
3.3	Verify correct equipment connection to earth link.		
3.4	Neutral connection to earth link.		
3.5	Check the primary and secondary connection status.		

Comments:

Client (PPC): Mohamed Ibrahim For. M. omar

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend

"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Schneider Electric	Insulation Resistance Test For Busways	INC 1_TR1
		Ref: BW-TS-2
		Total Page:

Date :27/6/2021	Site Location : AGROOD-1
Order Number : S20008.15	Equip. Tag : LV
Customer :Enppi	Rated Voltage : 400V
Project : EGPC CRUDE OIL TANK FARM PROJECT	Service voltage : 400V

Test Stage: ☐ Commissioning ☐ Pre-energizing

Test Device:	
Model : Megger	S.N:SVN233933432

Insulation resistance (Megohms)			
Phase to phase	**A-B:80G**	**B-C:144G**	**C-A:81G**
Phase to ground	**A-GND: 136G**	**B-GND: 120G**	**C-GND: 81G**
Phase to Neutral	**A-N: 70G**	**B-N:98G**	**C-N:137G**
Neutral to ground	**31G**		

Notes:-

a) The Megohms readings should not be less than the value calculated from the following formula. Mega Ohms = 100 / length of run (in feet) or Megohms = 30.5 / length of run (in meters) at least 1 Mega Ohm.
b) If readings are less than the values calculated from the formula consider drying the air with in the building for at least a day and then re-measure.
c) If low readings persist, contact the factory.
d) Each link is disconnected by an isolating device
e) Each link is disconnected from upstream transformer, with the main circuit breaker up stream of L.V switch board unplugged & in the open position

Comments----------

Enppi rep.: Name-Eng . Ahmed Nadeem ---------- Signature----------
PPC rep.: Name--------Eng: Mohamed Ibrahiem -- Signature----------
Schneider rep.: Name—Mahmoud abd elnour -------- Signature----------

Schneider Electric	Insulation Resistance Test For Busways	INC 2_TR2
		Ref: BW-TS-2
		Total Page:

Date :27/6/2021	Site Location : AGROOD-1
Order Number : S20008.15	Equip. Tag : LV
Customer :Enppi	Rated Voltage : 400V
Project : EGPC CRUDE OIL TANK FARM PROJECT	Service voltage : 400V

Test Stage: ☐ Commissioning ☐ Pre-energizing

Test Device:	
Model : Megger	SRV1147858pg

Insulation resistance (Megohms)			
Phase to phase	**A-B: 80G**	**B-C: 137G**	**C-A: 80G**
Phase to ground	**A-GND: 136G**	**B-GND: 120G**	**C-GND: 81G**
Phase to Neutral	**A-N: 23G**	**B-N: 25G**	**C-N:27G**
Neutral to ground	**73G**		

Notes:-

a) The Megohms readings should not be less than the value calculated from the following formula. Mega Ohms = 100 / length of run (in feet) or Megohms = 30.5 / length of run (in meters) at least 1 Mega Ohm.
b) If readings are less than the values calculated from the formula consider drying the air with in the building for at least a day and then re-measure.
c) If low readings persist, contact the factory.
d) Each link is disconnected by an isolating device
e) Each link is disconnected from upstream transformer, with the main circuit breaker up stream of L.V switch board unplugged & in the open position

Comments----------

Enppi rep.: Name-Eng . Ahmed Nadeem ---------- Signature----------
PPC rep.: Name--------Eng: Mohamed Ibrahiem -- Signature----------
Schneider rep.: Name—Mahmoud abd elnour -------- Signature----------

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

12.10- Electrical Pre-Commissioning Check Lists

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: P1-030-SUB-TR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	NA	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE		® Islam Sherif	
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: P1-030-SUB-TR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	N.A	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	N.A	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N.A	
18	Calibration test certificate of testing equipment to be checked.	N.A	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: P1-030-SUB-TR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	NA	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE		® Islam Sherif	
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: P1-030-SUB-TR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	N.A	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	N.A	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N.A	
18	Calibration test certificate of testing equipment to be checked.	N.A	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		® Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: G-030-SUB-TR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	NA	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE		® Islam Sherif	
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: G-030-SUB-TR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	NA	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	NA	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N.A	
18	Calibration test certificate of testing equipment to be checked.	NA	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: G-030-SUB-TR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	N.A	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: G-030-SUB-TR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	N.A	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	N.A	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N.A	
18	Calibration test certificate of testing equipment to be checked.	N.A	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE		® Islam Sherif	
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
BUS BAR TRUNKING SYSTEM
EL-07 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: 030-SUB-LVBD-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check bus duct assembly & installation w.r.t approved documents.	✓	
3	Bus-duct properly supported.	✓	
4	No mechanical damage.	✓	
5	Check Bus-duct installation for facilitation of maintenance work.	✓	
6	Check bus duct inside & outside cleaning.	✓	
7	Ensure all bus bar joints are clean and free form dirt and debris.	✓	
8	Bus bars and connecting links tightened to specified torque value as per manufacture recommendation.	✓	
9	Check bus duct grounding connections.	✓	
10	Check nameplate details as per approved documents.	✓	
11	Check heater circuit. (If Any)	NA	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0005 (04/14)

Enppi

PRE-COMMISSIONING CHECK LIST
BUS BAR TRUNKING SYSTEM
EL-07 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: 030-SUB-LVBD-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Perform insulation-resistance tests (Megger Test) at the DC test voltage appropriate for each bus section, phase-to-phase and phase-to ground(*)	NA	
13	Continuity tests shall be across all bolted connections in order to check their tightness.	✓	
14	Equipment test report and inspection certificate to be-checked.	✓	
15	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	NA	
16	Calibration test certificate of testing equipment to be checked.	NA	

REMARKS AND OBSERVATIONS :

(*) Refer to table [II]

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0005 (04/14)

Enppi

PRE-COMMISSIONING CHECK LIST
BUS BAR TRUNKING SYSTEM
EL-07 A

INSULATION TEST

TABLE OF MINIMUM TEST VOLTAGES

EQUIPMENT RATED VOLTAGE (kV)	TEST VOLTAGE (V) (one minute)	MINIMUM INSULATION RESISTANCE (M.OHMS)
33	5000	200
22	5000	200
11	5000	200
6.6	1000	200
3.3	1000	200
0.6	1000	100
0.4	1000	100
CONTROL WIRING	500	10

TABLE [II]

NOTES:

Manufacture's test voltage & minimum values for insulation resistance should be referenced

Enppi

PRE-COMMISSIONING CHECK LIST
BUS BAR TRUNKING SYSTEM
EL-07 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: 030-SUB-LVBD-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check bus duct assembly & installation w.r.t approved documents.	✓	
3	Bus-duct properly supported.	✓	
4	No mechanical damage.	✓	
5	Check Bus-duct installation for facilitation of maintenance work.	✓	
6	Check bus duct inside & outside cleaning.	✓	
7	Ensure all bus bar joints are clean and free form dirt and debris.	✓	
8	Bus bars and connecting links tightened to specified torque value as per manufacture recommendation.	✓	
9	Check bus duct grounding connections.	✓	
10	Check nameplate details as per approved documents.	✓	
11	Check heater circuit. (If Any)	N.A	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0005 (04/14)

Enppi

PRE-COMMISSIONING CHECK LIST
BUS BAR TRUNKING SYSTEM
EL-07 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: 030-SUB-LVBD-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Perform insulation-resistance tests (Megger Test) at the DC test voltage appropriate for each bus section, phase-to-phase and phase-to ground(*)	NA	
13	Continuity tests shall be across all bolted connections in order to check their tightness.	✓	
14	Equipment test report and inspection certificate to be-checked.	✓	
15	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	NA	
16	Calibration test certificate of testing equipment to be checked.	NA	

REMARKS AND OBSERVATIONS :

(*) Refer to table [II]

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE		Islam Sherif	
DATE			

10000-Z-000-EK7-TMP-0005 (04/14)

Enppi

PRE-COMMISSIONING CHECK LIST
BUS BAR TRUNKING SYSTEM
EL-07 A

INSULATION TEST

TABLE OF MINIMUM TEST VOLTAGES

EQUIPMENT RATED VOLTAGE (kV)	TEST VOLTAGE (V) (one minute)	MINIMUM INSULATION RESISTANCE (M.OHMS)
33	5000	200
22	5000	200
11	5000	200
6.6	1000	200
3.3	1000	200
0.6	1000	100
0.4	1000	100
CONTROL WIRING	500	10

TABLE [II]

NOTES:

Manufacture's test voltage & minimum values for insulation resistance should be referenced

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: P-030-SUB-TR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	NA	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: P-030-SUB-TR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	N.A	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	N.A	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N.A	
18	Calibration test certificate of testing equipment to be checked.	N.A	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		® Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: P-030-SUB-TR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	NA	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: P-030-SUB-TR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	NA	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	NA	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N.A	
18	Calibration test certificate of testing equipment to be checked.	NA	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: 030-SUB-TR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	NA	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE		Islam Sherif	
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: 030-SUB-TR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	N A	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	N.A	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N.A	
18	Calibration test certificate of testing equipment to be checked.	N.A	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
LOW VOLTAGE CABLES
EL-30 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: 030-SUB-TR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	N.A	
4	Check that all cables (power/ control) are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, tightness, termination and joints of cables are correctly executed.	✓	
7	Check where conductors have been terminated using crimped connections; ensure the correct size and type of crimping lugs.	✓	
8	Check that the bending radius of cables is not less than the minimum established.	✓	
9	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
10	Tie wraps to be used for cable and wires fixation.	✓	
11	Cable connections shall be torque tested.	N.A	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0014 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
LOW VOLTAGE CABLES
EL-30 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: 030-SUB-TR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Check that buried cables are correctly covered and protected.	NA	
13	Trench markers to be checked w.r.t approved documents.	NA	
14	Check cable glands for tightness & check the correct type of gland has been used for the size and type of installed cables.	✓	
15	Inspect cable laid in trenches, segregation and protection.	N.A	
16	Cables to be tested (continuity/insulation resistance). (*)	✓	
17	Equipment test report and inspection certificate to be-checked.	✓	
18	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	NA	
19	Calibration test certificate of testing equipment to be checked.	NA	

REMARKS AND OBSERVATIONS :

(*) Refer to table (III).

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		(R) Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0014 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
LOW VOLTAGE CABLES
EL-30 A

INSULATION TEST

LOW VOLTAGE CABLES

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
1000V	1000V	200

TABLE [III]

NOTES:

Manufacture's test voltage & minimum values for insulation resistance should be referenced.

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: 030-SUB-TR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	NA	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: 030-SUB-TR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	NA	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	NA	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	NA	
18	Calibration test certificate of testing equipment to be checked.	NA	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE		® Islam Sherif	
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
LOW VOLTAGE CABLES
EL-30 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: 030-SUB-TR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	N.A	
4	Check that all cables (power/ control) are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, tightness, termination and joints of cables are correctly executed.	✓	
7	Check where conductors have been terminated using crimped connections; ensure the correct size and type of crimping lugs.	✓	
8	Check that the bending radius of cables is not less than the minimum established.	✓	
9	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
10	Tie wraps to be used for cable and wires fixation.	✓	
11	Cable connections shall be torque tested.	NA	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE		® Islam Sherif	
DATE			

10000-Z-000-EK7-TMP-0014 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
LOW VOLTAGE CABLES
EL-30 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: 030-SUB-TR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Check that buried cables are correctly covered and protected.	NA	
13	Trench markers to be checked w.r.t approved documents.	NA	
14	Check cable glands for tightness & check the correct type of gland has been used for the size and type of installed cables.	✓	
15	Inspect cable laid in trenches, segregation and protection.	NA	
16	Cables to be tested (continuity/insulation resistance). (*)	✓	
17	Equipment test report and inspection certificate to be-checked.	✓	
18	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	NA	
19	Calibration test certificate of testing equipment to be checked.	NA	

REMARKS AND OBSERVATIONS :

(*) Refer to table (III).

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0014 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
LOW VOLTAGE CABLES
EL-30 A

INSULATION TEST

LOW VOLTAGE CABLES

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
1000V	1000V	200

TABLE [III]

NOTES:

Manufacture's test voltage & minimum values for insulation resistance should be referenced.

Enppi

PRE-COMMISSIONING CHECK LIST
POWER TRANSFORMERS
EL-02 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	DISCIPLINE	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	SYSTEM ID	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	SUB-SYSTEM ID	: 030-EL-004
ITEM TAG No.	: 030-SUB-TR-1B	AREA	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	GENERAL:		
1.1	Construction punch list to be checked.	✓	
1.2	Check transformer assembly as per General Arrangement Drawing.	✓	
1.3	Verify equipment nameplate ratings are in accordance with the drawings.	✓	
1.4	Inspect the physical and mechanical condition of the equipment for any visual damage.	✓	
1.5	Inspect radiator fins, conservator tank, joints for leakage after oil filling or top-up.	N.A	
1.6	Inspect all bushings for cracks.	NA	
1.7	Inspect silica gel for normal color.	NA	
1.8	Inspect and ensure cleanliness of all marshalling boxes, junction boxes, …etc	✓	
1.9	Check tap changer padlocking facility.	NA	
1.10	Check earthing connections to the earthing grid.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		® Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0028 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
POWER TRANSFORMERS
EL-02 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: 030-SUB-TR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1.11	All supports needed for power and control cables to be checked.	✓	
1.12	Wiring of control and protection devices to be checked.	✓	
1.13	Check installation against supplier installation procedure and instructions.	✓	
1.14	Bus duct(s) connections to be checked and inspected according to the approved supplier documents and recommendations.	✓	
1.15	Check components of the remote control panel (function, tap and physical check, assembly, connections as per approved documents,.etc).	NA	
1.16	Perform a transformer turns-ratio test.	NA	
1.17	Perform dielectric tests of transformer oil (*).	NA	
1.18	Check oil level or supply and fill up with oil as per specifications.	NA	
1.19	Check C.T rating and polarity w.r.t approved drawings.	✓	
1.20	Check for proper tap position.	NA	
1.21	Check winding insulation resistance (H.V to earth, L.V to earth & H.V to L.V) (**).	NA	

REMARKS AND OBSERVATIONS :

(*) Insulation on transformer oil sample (Breakdown test)

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE		® Islam Sherif	
DATE			

10000-Z-000-EK7-TMP-0028 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
POWER TRANSFORMERS
EL-02 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: 030-SUB-TR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1.22	Check & record insulation resistance of all auxiliaries & control wiring (MΩ), using 500 V megger.	N.A	
1.23	Verify that the control and alarm settings on temperature indicators are as specified.	N.A	
1.24	Using the calibrated torque-wrench method, verify that the tightness of accessible bolted electrical connections w.r.t supplier standard.	N.A	
2	**OFF-LOAD TAP CHANGER:**		
2.1	Ensure that the tap changer is Padlockable in all positions.	N.A	
2.2	Check tap-selector switch moves correctly in all positions.	N.A	
2.3	Check tap positions clearly marked in line with the data given on the rating plate.	N.A	
2.4	Check the tap provided with metallic handle to allow operation without the need of tools.	N.A	
3	**ON-LOAD TAP CHANGER:**		
3.1	Check devices (tap and physical check, assembly, connections as per approved documents, etc) of the tap changer oil compartment:		
	a) Oil level indicator.	N.A	

REMARKS AND OBSERVATIONS :

(**) - H.V terminals: 5000 V megger, min. 150 MΩ.
- L.V terminals: 1000 V megger, min. 10 MΩ.
- H.V/L.V termerminals: 5000 V megger, min. 150 MΩ.
(Manufacture's test voltage & minimum values for insulation resistance should be referenced)

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0028 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
POWER TRANSFORMERS
EL-02 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: 030-SUB-TR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
	b) Oil temperature indicator.	N.A	
	c) Pressure device.	N.A	
	d) Winding temperature indicator.	N.A	
	e) Buchholz oil/gas device.	N.A	
	f) Oil sampling connection.	N.A	
	g) One filling/filter connection valve.	N.A	
	h) One drain/filter connection valve.	N.A	
	i) A breather with a silica gel dehydrating capsule.	N.A	
3.2	Check the motor drive shall include but not limited to the following:		
	a) Padlockable incoming supply switch.	N.A	
	b) Manual operation facilities.	N.A	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		® Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0028 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
POWER TRANSFORMERS
EL-02 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: 030-SUB-TR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
	c) Local control facilities.	N.A	
	d) Local/remote selector switch.	N.A	
	e) Local mechanical tap position indicator.	N.A	
	f) Direction of rotation protection.	N.A	
	g) Tap status indication lamps.	N.A	
4	Equipment test inspection report and certificate to be checked and acceptance criteria values of the above mentioned tests to be revised.	N.A	
5	Check availability of vendor documents including commissioning and start-up instructions.	N.A	
6	Calibration test certificate of testing equipment to be checked.	N.A	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		® Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0028 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
POWER TRANSFORMERS
EL-02 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: 030-SUB-TR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	**GENERAL:**		
1.1	Construction punch list to be checked.	✓	
1.2	Check transformer assembly as per General Arrangement Drawing.	✓	
1.3	Verify equipment nameplate ratings are in accordance with the drawings.	✓	
1.4	Inspect the physical and mechanical condition of the equipment for any visual damage.	✓	
1.5	Inspect radiator fins, conservator tank, joints for leakage after oil filling or top-up.	NA	
1.6	Inspect all bushings for cracks.	✓	
1.7	Inspect silica gel for normal color.	NA	
1.8	Inspect and ensure cleanliness of all marshalling boxes, junction boxes, …etc	✓	
1.9	Check tap changer padlocking facility.	NA	–
1.10	Check earthing connections to the earthing grid.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE		® Islam Sherif	
DATE			

10000-Z-000-EK7-TMP-0028 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
POWER TRANSFORMERS
EL-02 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: 030-SUB-TR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1.11	All supports needed for power and control cables to be checked.	✓	
1.12	Wiring of control and protection devices to be checked.	✓	
1.13	Check installation against supplier installation procedure and instructions.	✓	
1.14	Bus duct(s) connections to be checked and inspected according to the approved supplier documents and recommendations.	✓	
1.15	Check components of the remote control panel (function, tap and physical check, assembly, connections as per approved documents,.etc).	N.A	
1.16	Perform a transformer turns-ratio test.	N.A	
1.17	Perform dielectric tests of transformer oil (*).	N.A	
1.18	Check oil level or supply and fill up with oil as per specifications.	N.A	
1.19	Check C.T rating and polarity w.r.t approved drawings.	✓	
1.20	Check for proper tap position.	N.A	
1.21	Check winding insulation resistance (H.V to earth, L.V to earth & H.V to L.V) (**).	N.A	

REMARKS AND OBSERVATIONS :

(*) Insulation on transformer oil sample (Breakdown test)

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		® Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0028 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
POWER TRANSFORMERS
EL-02 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: 030-SUB-TR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1.22	Check & record insulation resistance of all auxiliaries & control wiring (MΩ), using 500 V megger.	NA	
1.23	Verify that the control and alarm settings on temperature indicators are as specified.	NA	
1.24	Using the calibrated torque-wrench method, verify that the tightness of accessible bolted electrical connections w.r.t supplier standard.	NA	
2	**OFF-LOAD TAP CHANGER:**		
2.1	Ensure that the tap changer is Padlockable in all positions.	NA	
2.2	Check tap-selector switch moves correctly in all positions.	NA	
2.3	Check tap positions clearly marked in line with the data given on the rating plate.	NA	
2.4	Check the tap provided with metallic handle to allow operation without the need of tools.	NA	
3	**ON-LOAD TAP CHANGER:**		
3.1	Check devices (tap and physical check, assembly, connections as per approved documents, etc) of the tap changer oil compartment:		
	a) Oil level indicator.	NA	

REMARKS AND OBSERVATIONS :

(**) - H.V terminals: 5000 V megger, min. 150 MΩ.
- L.V terminals: 1000 V megger, min. 10 MΩ.
- H.V/L.V termerminals: 5000 V megger, min. 150 MΩ.
(Manufacture's test voltage & minimum values for insulation resistance should be referenced)

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0028 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
POWER TRANSFORMERS
EL-02 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: 030-SUB-TR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
	b) Oil temperature indicator.	NA	
	c) Pressure device.	N.A	
	d) Winding temperature indicator.	NA	
	e) Buchholz oil/gas device.	N.A	
	f) Oil sampling connection.	NA	
	g) One filling/filter connection valve.	N.A	
	h) One drain/filter connection valve.	NA	
	i) A breather with a silica gel dehydrating capsule.	NA	
3.2	Check the motor drive shall include but not limited to the following:		
	a) Padlockable incoming supply switch.	NA	
	b) Manual operation facilities.	N.A	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0028 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
POWER TRANSFORMERS
EL-02 A

PROJECT TITLE	: EDPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SYSTEM ID**	: 030-EL-004
SUB-SYSTEM NAME	: Substation 11/0.4KV Dry Type Distribution Transformers & busducts	**SUB-SYSTEM ID**	: 030-EL-004
ITEM TAG No.	: 030-SUB-TR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
	c) Local control facilities.	NA	
	d) Local/remote selector switch.	NA	
	e) Local mechanical tap position indicator.	NA	
	f) Direction of rotation protection.	NA	
	g) Tap status indication lamps.	NA	
4	Equipment test inspection report and certificate to be checked and acceptance criteria values of the above mentioned tests to be revised.	NA	
5	Check availability of vendor documents including commissioning and start-up instructions.	NA	
6	Calibration test certificate of testing equipment to be checked.	NA	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0028 (03/14)

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

12.11- Electrical Supplier Check Lists & Reports

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

13- Electrical Commissioning

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

13.01- Electrical -Commissioning Check Lists

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

13.02- Electrical Supplier Check Lists & Reports

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

14- Red Marked-up Drawings

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

14.01- P&ID

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

14.02- Instrumentation Drawings

System ID	030-EL-004
System Description	Substation 11/0.4KV Dry Type Distrbution Transformers & busducts System

14.03- Electrical Drawings